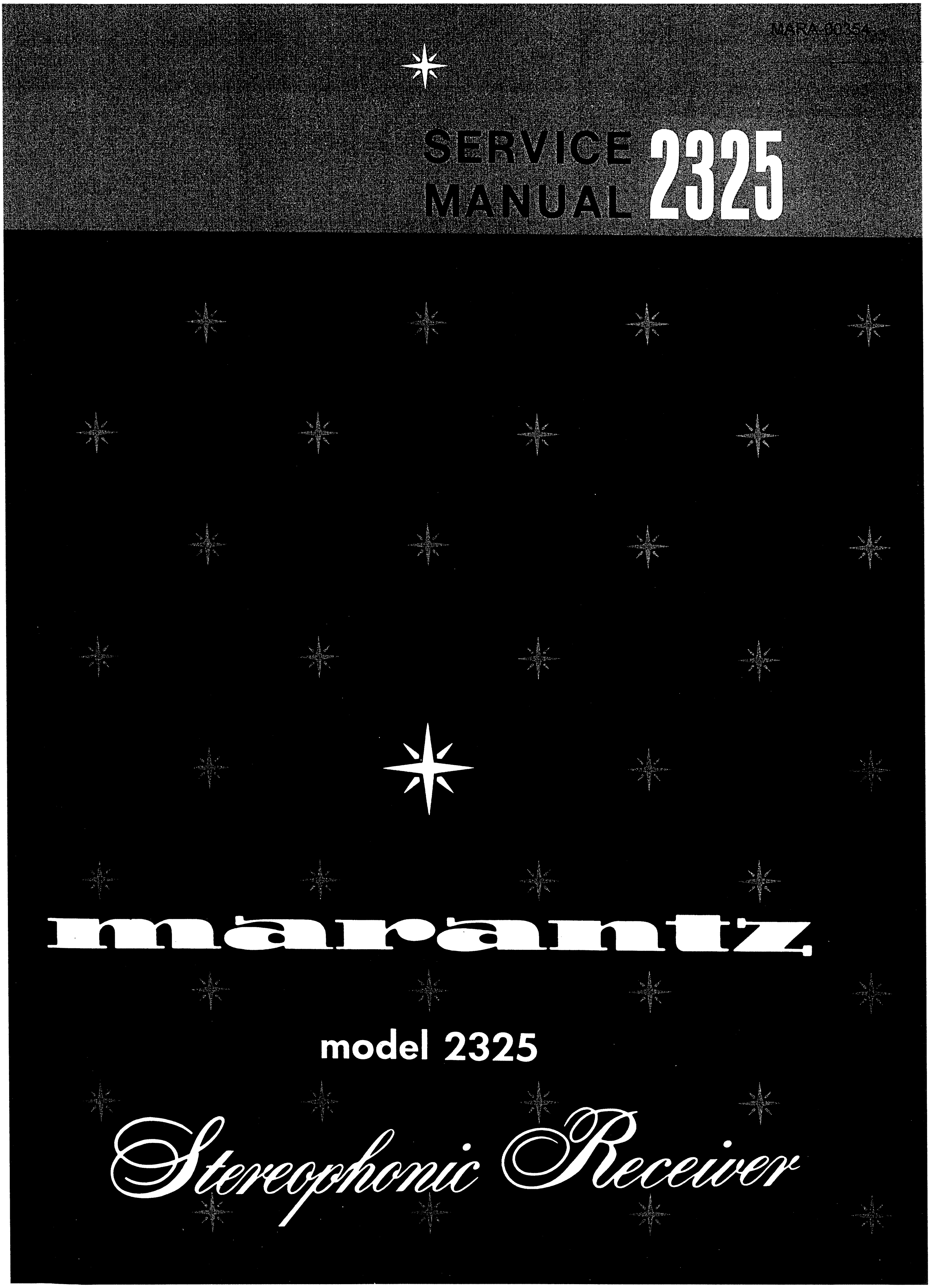

MARA-00354

SERVICE MANUAL 2325

marantz

model 2325

Stereophonic Receiver

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INTRODUCTION

This service manual was prepared for use by Authorized Warranty Stations and contains service information for the Marantz Model 2325 Stereophonic Receiver.

Servicing information and voltage date included in this manual are intended for use by the knowledgeable and experienced technician only. All instructions should be read carefully. No attempt should be made to proceed without a good understanding of the operation of the receiver.

The parts list furnishes information by which replacement part may be ordered from the Marantz Company. A belief description is included for parts which can be usually be obtained through local suppliers.

1. SERVICE NOTES

As can be seen from the circuit diagram, the chassis of the Model 2325 consists of the following units. Each unit mounted on a printed circuit board is drawn within bold dotted-line block on the circuit diagram.

1.	FM Front End	Mounted on P.W. Board P100
2.	AM Tuner Unit	Mounted on P.W. Board P150
3.	FM IF Amplifier	Mounted on P.W. Board P200
4.	MPX Stereo Decoding Amplifer	Mounted on P.W. Board P300
5.	Phono Amplifier	Mounted on P.W. Board P400
6.	Dolby Unit	Mounted on P.W. Board P600
7.	Power Amplifier	Mounted on P.W. Board P700
8.	Power Supply and Protection Relay Circuit	Mounted on P.W. Board P800
9.	FM Cal.	Mounted on P.W. Board PC01
10.	Pre and Tone Amplifier	Mounted on P.W. Board PE01
11.	Buffer Amplifier	Mounted on P.W. Board PH01
12.	400Hz Tone	Mounted on P.W. Board PL01
13.	400Hz Tone, Tape 1 and 2 Tape Monitor Switch	Mounted on P.W. Board PS01
14.	Tape Monitor Assembly	Mounted on P.W. Board PT01
15.	Multipath, Hi Blend, FM Muting, Low Filter, Hi Filter, Loudness, Main Speaker and Remote Speaker	Mounted on P.W. Board PU01
16.	Function Lamp	Mounted on P.W. Board PY01
17.	Dial Lamp	Mounted on P.W. Board PZ01

2. AM TUNER

The AM Tuner section in the 2325 consists of one IC, including an RF amplifier, local oscillator, mixer, IF amplifier, and detector, and three transistors, one of which forms a signal strength indication amplifier and the other two form detected audio signal amplifier.

All components except the tuning capacitor and ferrite bar antenna are mounted on the printed circuit board P150.

The AM signal induced in the ferrite bar antenna is fed to the RF amplifier input (Pin ⑫) and amplified to the level required for overcoming conversion noises, thus giving good S/N performance. The tuned circuit inserted in each of the output and input circuits of the RF amplifier assures very high image and spurious rejection performance.

Thus the amplified and selected AM signal is then applied to one Mixer input (Pin ①). While the local oscillator voltage is injected to the other Mixer input (Pin ⑯) through a capacitor C157. Then both AM signal and local oscillator output voltage are mixed and converted into 455kHz intermediate frequency. The resulting IF signal is applied to the IF transformer L153 consisting of one ceramic filter and two tuned circuits.

The output of L153 is led to the IF amplifier input (Pin ⑨) through a coupling capacitor C162 and amplified to the sufficient level to drive the detector. The detected audio signal derived from pin ⑦ is filtered and amplified, and the final audio output is obtained from the collector of H153 and applied to the TAPE MONITOR OUT jacks through the function switch.

The DC component of the detected IF signal is used as an AGC voltage to control emitter current of RF amplifier through the AGC amplifier incorporated in the IC. A part of the DC component is also led to the signal strength indication amplifier H154. The output appearing at the collector of H154 is level adjusted by R178, indicated on the signal strength meter M002.

2.1 Suggestions for Troubleshooting AM Tuner

Check for broken AM bar antenna, next try to tune stations by rotating the fly-wheel tuning knob slowly and observe the AM signal strength meter whether it deflects or not. If the signal strength meter gives a deflection at several received frequencies, no failure may exist in the stages at least preceding the detector circuits. Next, connect an oscilloscope to the test point Ⓑ or J161 and check for audio signals with the tuning meter deflected. If the signal strength meter does not deflect, check the local oscillator circuit. Normal local oscillator output voltage at the hot end of the oscillator tuning capacitor is about 1.5 or 3 volts, varying with the tuning capacitor position. When measuring the local oscillator output voltage use an RF VTVM, no circuit tester gives correct indication. If the local oscillator output voltage is normal, check all voltage distribution in the AM circuits by using a DC VTVM and compare the measured values with those given in the schematic diagram.

3. FM TUNER

The FM Tuner section in the Model 2325 consists of four functional blocks: FM Front End, IF Amplifier & Detector, Muting Control and MPX Stereo Decoding Circuit.

An FM signal induced by the FM antenna is led to FM antenna coil L101 through the balun coil. The signal is then applied to the FET RF amplifier which in turn feeds its output to the next FET Mixer H102 through the triple tuned high selective circuit. The FET Mixer converts its input signal into 10.7MHz IF signal and amplifies it at the same time. The H103 is a local oscillator, the output of which is injected into the soure of the FET Mixer, the injection voltage being about 700mV. The 10.7MHz front end output is led to the next IF amplifier unit through the coaxial cable.

The IF amplifier unit consists of seven IF amplifier stages and one AGC amplifier stage. Eight pieces of ceramic filter are also used to obtain high selectivity, and four symmetrical diode limiter stages are also employed for the best limiting characteristics, improved capture ratio and good AM suppression.

A part of the FM Front End output is fed to and rectified by the AGC amplifier H209, and the rectified output is fed back to the gate of the FET RF amplifier to decrease the gain with increase of the signal strength.

The signals required for multipath indication are obtained from the five IF amplifier stages through the coupling capacitors C252, C211, C214, C223 and C228, respectively, and are rectified by five pairs of full-wave diode circuit. Thus these AM components of the FM signal are approximately mixed and amplified by the transistors HU01 and HU02 and the output is again rectified to obtain DC current required for actuating the Multipath Indication meter.

The IF signal sufficiently amplified through each IF amplifier stage is finally led to the Detector Amplifier H208. The detected audio output is led to the buffer amplifier H210 and its buffered output is led to: (a) the noise amplifier H310 through the resistor R378 and capacitor C333, (b) the QUADRADIAL OUTPUT Jack on the rear panel through the resistor R379, (c) the MPX stereo decoding IC (H321) through R301 and H301.

The DC current caused at the third windings of the discriminator transformer is directly led to the FM center tuning meter.

3.1 Audio Muting and Stereo mode auto-selecting circuit

The muting cirucit consisting of all solid-state electrical switching is incorporated in the Model 2325. Three input control the muting function. The first is related to signal strength, the second to the noise condition at the detector, and the third is derived from the DC component of the detector output. These inputs are properly matrixed and gated to provide muting free from noise and transients.

The first input of DC voltage obtained by rectifing a part of the IF output signal from the H205 and H206 is fed to the base of H308 and turns it on, if the IF output is greater than a predetermined level (muting threshold level). When the H308 is turned on, the H309 is turned off, allowing the emitter-collector resistance to be increased and the collector voltage to be raised to about 9V. The raised collector voltage increases the gate bias voltage and turns the switching FET H301 on, decreasing the source-drain resistance to near zero ohm and allowing the audio signal applied to the source to flow to the decoding IC pin ② through the source-drain path.

When the input signal is lower than the predetermined level, the DC output obtained is small and can not turn on the H308, thus H308 keeps its off state. This turns H309 on, decreasing the collector voltage and turning H301 off. Thus no audio signals can pass through the FET. This is the fundamental principle of the muting operation but for more elaborate muting operation, the second and the third inputs are necessary.

The second input is used to protect the muting operation and MPX stereo beacon lamps from misoperation due to undesirable noises. The high frequency noises included in the detected audio signals are separated by a small capacitor C333 and are amplified by the noise amplifier transistor H310. Its output is rectified by the two diodes. The rectified DC output is proportional to the noise components in the audio signals.

When there are excessive noises in the audio signals such as obtained with a station incorrectly turned in, the rectified DC output turns the transistor H311 on, decreasing the emitter-collector resistance to zero. This means the collector of H309 is grounded, therefore the H301 is turned off and any audio signals having excessive, high-frequency noises can not go through the FET's source-drain path.

The transistor H317, also, turns off when the transistor H309 or H311 turns on, and turns on the transistor H303 connected to pin ⑧ on the MPX decoding IC. Pin ⑧ is therefore grounded equivalently to set the IC in the monaural mode of operation. This prevents misoperation due to undesirable noises when the FM tuner is out of tuning.

The third input is obtained from the FM discriminator circuit. The DC output, so called "S" curve, is applied to the gate of H312 through the resistor R281 and voltage divider network (R361, R362). The DC output is zero with a station correctly tuned in, but will vary from negative to positive value, or vice versa, when the tuning point is deviated toward either higher or lower frequency from the correct tuning point.

When the DC output is increased to greater level than the predetermined one, the increased source potential of H312 turns the transistor H315 on. (This means the collector of H309 is grounded, H301 turns off, H317 turns off, and H303 turns on.) This grounds pin ⑧ at the MPX stereo decoding IC, therefore the decoder is set in the monaural mode of operation and the stereo indicator lamp turns off. When the DC output is increased to the predetermined negative level, the decreased source potential turns the H313 off, which turns the H314 on. (This means the collector of H309 is grounded.) The subsequent changes are exactly the same as that just described above.

Thus when the tuning is shifted or deviated to certain frequencies at which undesirable noisy side-audio signals are produced, both muting and monaural/stereo switching transistors H303 are automatically operated and open the circuits.

With the station correctly tuned in, the bias current of the FET H312 is adjusted so that both transistor H314 and H315 are not turned on, giving no effect on the transistor H309.

3.2 MPX Stereo Decoding Circuit

The stereo composite signal from the buffer amplifier undergoes phase compensation by R301 and C201, is led through the muting switching FET H301 to the input terminal pin ② of the MPX stereo decoding IC H321 on PLL (Phase Locked Loop) basis, and is decoded into the left and right stereo signals, which become available at pins ④ and ⑤, respectively. These decoded left and right stereo audio signals are introduced through the low pass filter consisting of L301 to L304 and C311 to C320 for elimination of undesirable residual switching signal and through the de-emphasis network consisting of R325, R326, C321 and C322 to the npn-pnp direct coupled audio amplifier, where the signals are amplified to a required level for the output from J311 and J313. From these jacks, the audio signals are led through the function switch to the TAPE MONITOR OUT jacks. Figure 1 presents an internal block diagram showing the functions of the PLL basis MPX stereo decoding IC HA1156. The input stereo composite signal, amplified by the audio amplifier, is delivered to the phase detectors PD-1 and PD-2. A part of the stereo composite signal is also delivered to the stereo decoder section. The VCO (Voltage Control Oscillator) produces a free run oscillation in the neighborhood of 76kHz with the time constant determined by the capacitor C305 and resistors R311 and R312 set on the outside of pin ⑭. The VCO output has its frequency divided into 19kHz through the two frequency divider stages (DIV-1, DIV-2), and is reversed to the phase detector PD-1, which contains two input terminals designed to produce an output in proportion to the product of the two input signals. The signal led to one PD-1 input is a 19kHz square wave formed through frequency division of the 76kHz VCO output signal by the two frequency divider stages DIV-1 and DIV-2, and the 19kHz pilot signal included in the stereo composite signal as a reference signal is led to the other PD-1 input. Therefore, the output of the PD-1 which has passed through the low pass filter LPF-1 provides DC output voltage in proportion to the phase variance between the two inputs. This DC output voltage is amplified by the DC amplifier, and is supplied to the 76kHz VCO as a control voltage. This means that the output frequency and phase of the VCO have been phaselocked to the input pilot signal. The 38kHz sub-carrier reproduced by the PLL, as stated above, is delivered through the stereo switch to the stereo decoder section as switching signal, thus driving the decoder stage. One PD-2 input is given the 19kHz resulting from the frequency division completed by the DIV-1 and DIV-3, whereas the other input gets the 19kHz output contained in the composite signal, and the output is provided with a DC output in proportion to the amplitude of the pilot signal.

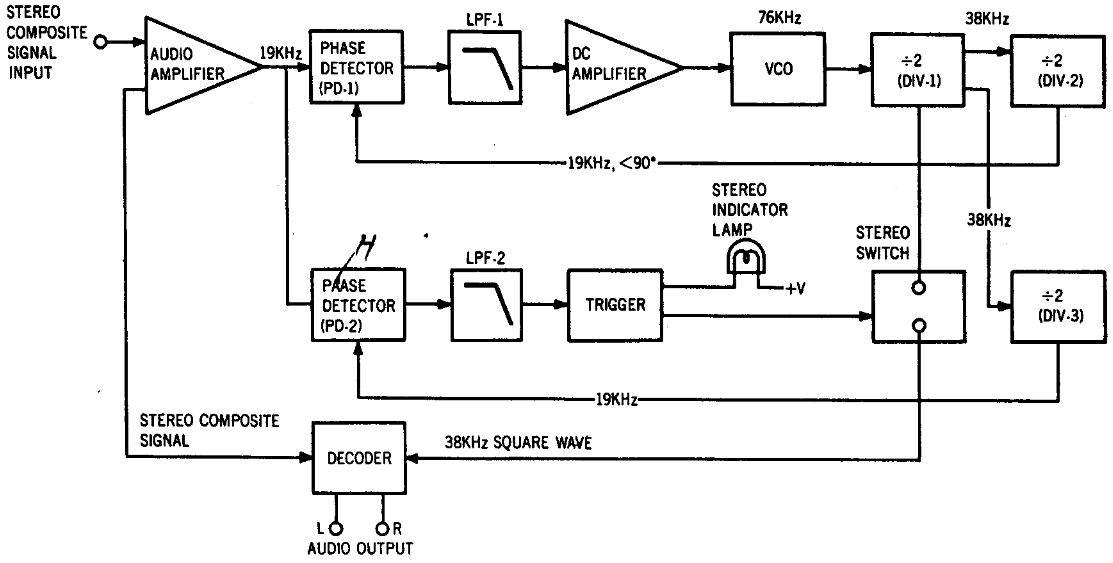


Figure 1. Block Diagram of the HA1156

This DC output is furnished through LPF-2 to the trigger amplifier which drives the stereo indicator lamp and stereo switch. Therefore, insufficient supply of the pilot signal results in failure to light the stereo indicator and to turn on the stereo switch located in the path of the 38kHz switching signal, thereby avoiding a wrong stereo operation.

H303 fitted on the outside of pin ⑧ is a switching transistor for automatic monaural-stereo switchover. When the intensity of an incoming signal from an FM station is weaker than a predetermined level, this H303 is turned on and pin ⑧ is grounded, thereby developing a condition for monaural reception. For a forced monaural operation, switch the MODE switch to "MONO", and H303 comes into the "On" state with the positive bias voltage applied to the base, and pin ⑧ is grounded, thereby establishing monaural operation. The transistor H302 connected externally to pin ⑭ is intended to stop the 76kHz oscillation of the VCO which interferes an AM signal during the reception of an AM station. When the function switch is set to "AM" position, a positive bias is charged on the base of H302, H302 is turned on, and pin ⑭ is grounded. Thus, the oscillation of the VCO is stopped, ending the interference with AM reception.

3.3 Suggestion for Troubleshooting FM Tuner

3.3.1 Symptom: No FM Reception

First turn the POWER switch on and try to tune FM stations. Rotate the fly-wheel tuning knob slowly and observe the FM signal strength meter. If the signal strength meter deflects at several frequencies received, the tuner circuits preceding the discriminator circuit may have no failure. When no reading is obtained in the meter, check the FM local oscillator circuit, using an RF VTVM. The normal local oscillator voltage is one or two volts (rms) at the tuning capacitor, depending on the tuning capacitor position. If the local oscillator voltage is normal, then check all voltage distribution in the FM Front End and IF amplifier unit and compare them with those shown in the circuit diagram. When the signal strength meter deflects but no sound is obtained, check the audio circuit, using a high sensitive oscilloscope.

3.3.2 Symptom: No Stereo Separation

First check that the "MODE" switch is in normal 2 CH position. Connect an FM RF signal generator output modulated by a stereo modulator to the rear FM antenna terminals, and check whether the stereo beacon is turned on or not. If not turned on, check for 19kHz VCO output signal (J310), using an oscilloscope and frequency counter.

4. PHONO AMPLIFIER

Program source signals from the PHONO jacks on the rear panel are fed to the input circuit of the Phono Amplifier through the selector switch, and the output of the Phono Amplifier is led to another section of the selector switch. This amplifier provides a gain of 40dB.

5. BUFFER, TONE AND FILTER AMPLIFIERS

After passing through the FUNCTION switch (S001-2R, -4R) or TAPE MONITOR switch, all signals are converted to low output impedance by the buffer amplifier. The signals, then, are passed through the dolby circuit, MODE switch and HI-BLEND switches and BALANCE and VOLUME controls.

Signals properly attenuated by the VOLUME control are led to the tone amplifier and are subjected to tone control by the BASS, MID and TREBLE controls, and high- and low-cut filter amplifier circuits.

Thus controlled audio signals are then led to the PRE OUT jacks on the rear panel.

6. POWER AMPLIFIER

The signal from the tone filter amplifier is applied to the differential amplifier (base of H701) through the coupling capacitor C701. The differential amplifier provides very high input impedance, and its collector output (H702) is led to the base of H705 which in turn feeds its output to the next stages: H706 through the network of R721, C710 and R728, and H707 through the network of R721, C711 and R729. The outputs of H706 and H707 are led tc the H708 and H709, respectively. H001, H002, H003 and H004 are power transistors used in complementary symmetry configulation and mounted on the heat sink.

To maintain overall amplifier stability and linearity, a degenerative feed back is utilized throughout the amplifier. This feedback is also necessary to reduce distortion to within a specified limit. The RC network of R728 and C710 conditions the feedback signal for the audio signals. R729 and C711 also form a feed back loop provided to obtain a stable zero DC offset voltage at the speaker output terminals. The R713 is a trimming resistor to adjust the DC offset voltage.

A dynamic bias is applied to the bases of driver transistors H708 and H709. This dynamic bias circuit comprises H714, H715 and R740. This provides a variable base bias for driver transistors that automatically maintains the proper base voltage to temperature change. The temperature sensitive biasing components of the dynamic circuit are thermally coupled through the heat sink with the power amplifier transistors.

7. POWER PROTECTION CIRCUIT

A protection circuit for the amplifier is provided by sensing resistor networks and two switching transistors. When the output transistors are over-driven, the current increase through the power output transistor causes increase of the current flowing through R746. This increased voltage potential is applied to the base of H710 through the resistor R732 and turns H712 on. This means that the base of H708 is by-passed through the emitter-collector path of H712 to the ground, since the emitter of H712 is connected through R730 to the base of H708. Thus, the input signal to H708 is restricted to the value which maintains the operation of power transistor within the safety area. A resistor network of R736, R738 and H720 also works as a sensing network. If the center voltage (collector voltage of the power transistors) is excessively increased to a positive value by some troubles, the voltage applied to the base of H710 turns the H712 on, making bypass circuit to protect the power transistors. For the other half cycle of the drive signal, the same operating principle is applied as described above.

8. SPEAKER PROTECTOR RELAY CIRCUIT

The speaker protection circuit consisting of H805, H806, H807, and associated parts protects the speaker system against any loud "pop" sound developed. This circuit is so designed that no sound is heard for the first three or five seconds after the power switch is turned on by the time constant circuit consisting of C813 and R816. This circuit also protects the speaker system against some troubles due to DC unbalance between the speaker system terminals by instantly operating the relay and cutting off the speaker system from the circuit. If the DC unbalance voltage (positive) is developed between speaker terminals by possible defects such as broken power transistor, short-circuits, or broken potentiometer R713, as the base of H808 is connected to the speaker terminal, the transistor H805 is turned on by the offset voltage developed. This turns the transistors H806 and H807 off, thus cutting off the relay and disconnecting the speaker from the output circuit. If a negative offset voltage is developed, this voltage directly turns the H806 and H807 off, which disconnect the speaker from the circuit and protected.

The circuit also protects the speaker system from possible damage if the amplifier is over-driven by very low frequency such as 7 or lower cycles per second.

9. DOLBY UNIT

The Dolby unit built in the Model 2325, which is a switchable processor, is inserted in each of both R and L channels. The attached "DOLBY PROCESSING CHART" will facilitate you to well understand the operation of the Dolby circuit.

An input signal coming to J601 is amplified by H601, and its output signal is led to the filter which cuts off the tape bias. The signal passed through the filter is further amplified and comes to the mixing circuit of the resistors R623 and R625 and to the phase inverting circuit of H607 and H609. The output signal is fed out of J607.

In the recording mode of operation, the signal is fed out of J605 preceding the mixing circuit and is led to J611. The signal is then discriminated in the frequency and level by the dynamic filter consisting of H611, H613, H615 and H617, and is fed back to the mixing circuit.

In the playback mode of operation, a part of the output signal (at J607) is led to J611 and discriminated in the frequency and level by the dynamic filter consisting of H611, H613, H615 and H617 and fed back to the mixing circuit.

10. 400Hz TONE

The 400Hz tone signal which is a 580mV, 400Hz sine wave is available at the TAPE MONITOR OUT terminal at any position of the DOLBY switch (with the exception of the RECORD II position) and SELECTOR switch

The output signal of the 400Hz oscillator consisting of HL01 and HL02 is delivered through the emitter follower HL03 to JL02 and JL03. The output levels at JL02 and JL03 are adjusted to 580mV and approximately 50mV, respectively.

The signal fed from the Dolby Unit P.W. Board (P600) comes to JL04 and is rectified through HL06. The rectified output at JL06 is led to the meter M002.

11. DOLBY SWITCH

This switch sets the Dolby noise-reduction circuit for record or playback and also switches the meter from the AM or FM SIGNAL STRENGTH mode to the DOLBY CAL LEVEL mode, or vice-versa. With the DOLBY switch placed in "OFF" position, the meter will be used as a SIGNAL-STRENGTH meter; in all other positions as a DOLBY CAL LEVEL meter.

11.1 DOLBY FM

This position is used to listen to Dolbyized FM broadcasts. The Dolby FM level has been pre-adjusted at the factory.

11.2 PLAY

This position is used to play back a Dolbyized source (except FM).

11.3 OFF

With this position, the Dolby circuit is by-passed and the input signals are directly fed to both TAPE MONITOR OUT jacks and amplifiers.

11.4 RECORD I

For making a Dolbyized recording from an in-coming "flat" (non-Dolbyized) signal. When the MONITOR switch is in the SOURCE (out) position, the "flat" signal will be heard. When the MONITOR switch is in the TAPE (in) position, the Dolbyized signal from the tape will be heard.

11.5 RECORD II

For making a "flat" (non-Dolbyized) recording from an in-coming Dolbyized signal. Regardless of the position of the MONITOR switch, a "flat" signal will be heard.

12. RECORD LEVEL (L) AND (R) KNOBS

These knobs control the record level of the signals to be recorded through the Dolby Unit. Adjust the knobs so that the Level Meter pointers on the tape recorder do not exceed the 0VU level.

13. PLAY CAL. (L) AND (R) KNOBS

These knobs adjust the playback outputs from a tape deck to the proper Dolby level.

14. DOLBY FM PRESET LEVEL CONTROLS

These factory-adjusted controls govern the FM output level to the Dolby circuit. These controls are for the use of a qualified technician only.

15. 400Hz TONE SWITCH

This is used for calibration of the record input level of the tape deck. When the switch is depressed, the built-in oscillator operates and a 580mV sine wave signal output will be fed to the four TAPE MONITOR OUT jacks.

16. SUGGESTIONS FOR TROUBLESHOOTING POWER AMPLIFIER

16.1 Excessive Line Consumption

a. Check for shorted rectifiers H009 and H010; also check C008 and C009.

b. Check for shorted transistors H708 and H709. H001, H002, H003, H004, H005, H006, H007 and H008, or check H715. Check for bias transistor H714. Check L004 for short.

CAUTION: BECAUSE THE DRIVER AND OUTPUT STAGES ARE DIRECT COUPLED, COMPONENTS MAY FAIL AS A DIRECT RESULT OF INITIAL COMPONENT FAILURE. IF A SHORTED TRANSISTOR OR ZENER DIODE IS FOUND, OR CONTROL OR BIAS DIODE, BE SURE TO CHECK THE REMAINING DRIVER AND OUTPUT COMPONENTS FOR SHORT OR OPEN CIRCUIT BEFORE REENERGIZING THE AMPLIFIER.

16.2 No Line Consumption of Zero Bias

a. Check the line cord, fuse, transistors H715, H001, H002, H003, H004, H005, H006, H007 and H008, and bias transistor H714.

b. Check for open rectifiers H009 and H010 or open L004.

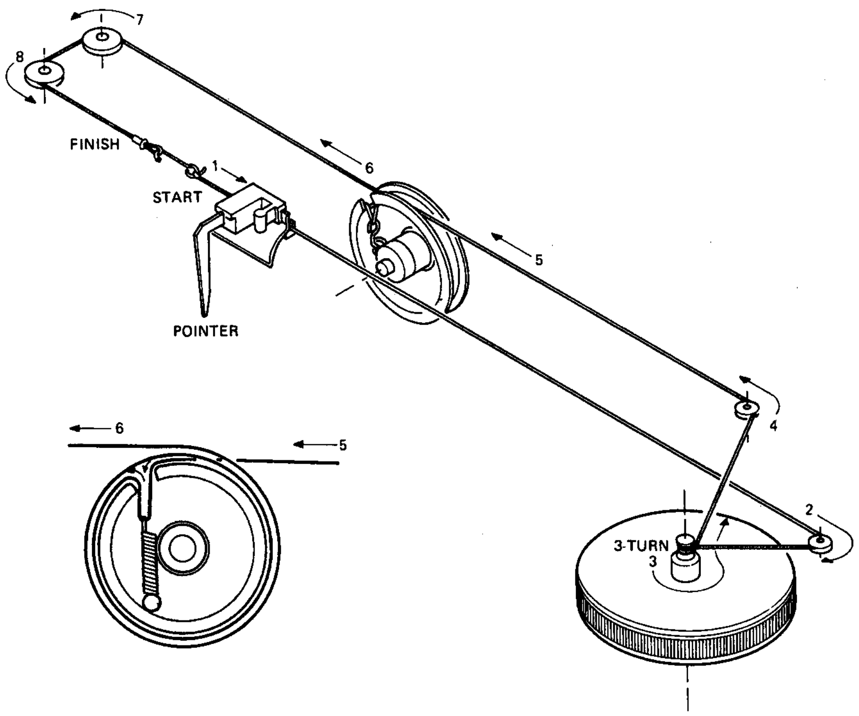


Figure 2. Dial Stringing

17. TEST EQUIPMENT REQUIRED FOR SERVICING

Table 1 lists the test equipment required for servicing the Model 2325 Stereophonic Receiver.

Item	Manufacturer and Model No.	Use
AM Signal Generator		Signal source for AM alignment.
Test Loop		Used with AM Signal generator.
FM Signal Generator	Less than 0.3% distortion	Signal source for FM alignment.
Stereo Modulator	Less than 0.3% distortion	Stereo separation alignment and trouble shooting.
Frequency Counter		MPX Oscillator adjustment (VCO).
Audio Oscillator	Weston Model CVO-100P, less than 0.02% residual distortion is required.	Sinewave and squarewave signal source.
Oscilloscope	High sensitivity with DC horizontal and vertical amplifiers.	Waveform analysis and trouble shooting and ASO alignment.
VTVM	With AC, DC, RF range	Voltage measurements.
Circuit Tester		Trouble shooting.
AC Wattmeter	Simpson, Model 380	Monitors primary power to Amplifier.
AC Ammeter	Commercial Grade (1-10A)	Monitors amplifier output under short circuit condition.
Line Voltmeter	Commercial Grade (0-150V AC)	Monitors potential of primary power to amplifier.
Variable Autotransformer (0-140V AC, 10 amps)	Powerstat, Model 116B	Adjusts level of primary power to amplifier.
Shorting Plug	Use phono plug with 600 ohm across center pin and shell.	Shorts amplifier input to eliminate noise pickup.
Output Load (8 ohms, ±1% 100W)	Commercial Grade	Provides 8-ohm load for amplifier output termination.
Output Load (4 ohms, ±1% 100W)	Commercial Grade	Provides 4-ohm load for amplifier output termination.

Table 1. Test Equipment Required for Servicing

18. AM ALIGNMENT PROCEDURES

18.1 AM IF ALIGNMENT

1. Connect a sweep generator to J153 and an alignment scope to the test point Ⓑ.
2. Turn each core of IF transformer L153 for maximum height and flat top symmetrical response.

18.2 AM Frequency Range and Tracking Alignment

1. Set an AM signal generator to 515kHz. Turn the tuning capacitor fully closed (with the tuning pointer placed at the low end.) and adjust the oscillator coil L152 for maximum audio output.

2. Set the signal generator to 1650kHz. Place the tuning pointer in the high frequency end and adjust the oscillator trimmer on the oscillator tuning capacitor for maximum audio output.
3. Repeat Steps 1 and 2 above until no further adjustment is necessary.
4. Set the signal generator to 600kHz and tune the receiver to the same frequency and adjust the slug core of the AM ferrite rod antenna and RF coil L151 for maximum output.
5. Set the signal generator to 1400kHz and tune the receiver to the same frequency and adjust both trimming capacitors of the antenna and RF tuned circuit for maximum output.
6. Repeat Steps 4 and 5 above until no further adjustment is necessary.

Note: During tracking alignment reduce the signal generator output as necessary to avoid AGC action.

18.3 AM Signal Strength Meter Adjustment

Set the AM Signal generator to 1000kHz with 5KμV output level, and adjust R178 until the signal strength meter may read 80%.

19. FM ALIGNMENT PROCEDURES

1. Connect an FM signal generator to the FM ANTENNA terminals and an oscilloscope and an audio distortion analyzer to the TAPE MONITOR OUT jacks on the rear panel.
2. Set the signal generator to 87.0MHz and provide about 3 to 5μV. Place the tuning pointer at the low frequency end by turning the tuning knob and adjust the core of the oscillator coil L105 for maximum audio output.
3. Set the signal generator to 109.0MHz and provide about 3 to 5μV output. Turn the tuning knob to place the tuning pointer to the high frequency end and adjust the trimming capacitor C106 for maximum output.
4. Repeat Steps 2 and 3 above until no further adjustment is necessary.
5. Set the signal generator to 90MHz and tune the receiver to the same frequency. Decrease the signal generator output until the audio output level decreases with decrease of the signal generator output. Adjust the antenna coil L101, RF coils L102, L103, and L104, and IF transformer L106 for minimum audio distortion.
6. Set the signal generator to 106MHz and tune the receiver to the same freqency. Adjust the trimming capacitors (C102, C103, C104, C105) of the antenna and RF tuning circuits for minimum distortion.
7. Repeat Steps 5 and 6 above until no further adjustment is necessary.
8. Adjust the secondary core (upper) of the discriminator transformer L201 until the center tuning meter pointer indicates its center with no signal applied. Set the signal generator to 98MHz and increase its output level to 1kμV and tune the receiver to the same frequency so that the center tuning meter pointer indicates its center. Adjust the primary core (lower) of L201 for minimum distortion.
9. Set the signal generator to 98MHz with 100kμV, and adjust R374 until signal strength meter may read 90%.

19.1 Stereo Separation Alignment

1. Set an FM signal generator to provide 1KμV at 98MHz. Tune the receiver to the same frequency so that the center tuning meter pointer indicates its center. Then turn off the modulation of the signal generator, connect a frequency counter to the test point J310 (point ©) and adjust R311 until the frequency counter may precisely read 19kHz.
2. Modulate the signal generator with the stereo composite signal composed of either L or R channel (of course, the pilot signal must be included).
3. Adjust the trimming resistor R301 for maximum and same separation in both channels.

19.2 Muting Circuit Alignment

1. Connect a VTVM to the tap of the resistor R363 and adjust the resistor R363 until the meter reads 0.75V DC at no signal.
2. Set an FM signal generator to provide 1KμV at 98MHz and tune the receiver to the same frequency correctly.
3. Turn the MUTING pushswitch on. Shift the FM signal generator frequency higher and lower and note both higher and lower shifted frequencies at which undesirable audio side responses are muted out. Adjust R363 so that the same shifted frequencies mute the undesirable audio side responses.
4. Adjust R362 for preferred frequency shift at which the muting circuit operates.

20. AUDIO ADJUSTMENT

20.1 Automatic Voltage Regulator Adjustment

Connect a DC voltmeter between pins J804 and J805, and adjust the trimming resistor R809 for 35V DC.

20.2 Main Amplifier DC Offset Alignment

Connect a DC voltmeter with 0.5 or 1V range between the speaker terminals and adjust the trimming resistor R713 for "zero" DC output on the meter.

Repeat the same procedure for the other channel.

Note: During this alignment no load should be connected to the speaker terminals.

20.3 Idle-Current Adjustment

Connect a VTVM between pins J702 and J708. Next, rotate the trimming resistor R740 fully counterclockwise, then rotate it clockwise until the VTVM reads 15mV DC (75mA).

Repeat the same procedure for the other channel.

Note: During this alignment no load should be connected to the speaker terminals.

20.4 Main Amplifier DC Offset Re-Alignment

Check the DC offset voltage aligned in the Sec. 20.2 above. If anyDC output is observed on the DC voltmeter, adjust R713 again for "zero" output.

20.5 Phono-Amplifier Adjustment

Connect an oscilloscope to the TAPE MONITOR OUT jacks and an audio signal generator to the PHONO jacks. Place the selector switch in the PHONO position. Increase the 1kHz audio signal level gradually until a slight clipping on top of the sine wave is observed on the oscilloscope. Adjust the trimming resistor R408 for equal clipping level.

For the other channel, adjust R409.

21. DOLBY ALIGNMENT PROCEDURE

Prior to the adjustment, turn the PLAY CAL and REC LEVEL controls all the way to the right and the SELECTOR switch to the CD-4/AUX position. Use the CD-4/AUX and TAPE MONITOR OUT jacks for the signal input and output.

21.1

(1) Set the DOLBY switch to the RECORD I position.

(2) Adjust the semi-fixed resistor R653 for maximum source voltage of the field-effect transistor H611.

(3) Connect J620 and J613 to the ground.
(4) Apply a 5kHz sine wave so as to obtain 17.5mV at J605.
(5) Record the output level at the TAPE MONITOR OUT jack with the above signal applied.
(6) Adjust the semi-fixed resistor R659 until the output level at the TAPE MONITOR OUT jack may increase 10±0.25dB with J620 disconnected from the ground.
(7) Record the above output level.
(8) Adjust the semi-fixed resistor R653 until the output level may decrease 2±0.25dB with J613 disconnected from the ground.
(9) Connect J613 to the ground again, and assure the level increase in Step (6) above. Disconnect J613.

21.2

(1) Set the DOLBY switch to the RECORD II position.
(2) Connect J620 and J613 to the ground.
(3) Apply a 5kHz sine wave so as to obtain a 44mV at J605.
(4) Check to insure that the level at the TAPE MONITOR OUT jack decreases 10±0.5dB with J620 disconnected from the ground.
(5) Disconnect J620 and J613 from the ground.
(6) Check to insure that the output voltage at the TAPE MONITOR OUT jack is 17.5mV(±0.5dB).

21.3

For the level adjustment, set the DOLBY switch and SELECTOR switch to the RECORD I and CD-4/AUX positions, respectively, and use the TAPE MONITOR OUT jack for the signal output. By setting the 400Hz TONE pushswitch "in", the 400Hz sine wave is fed out. Adjust the semifixed resistor RL11 for 580mV sine wae output voltage in both R and L channels. Then, set the DOLBY switch to the RECORD II position, and apply the 400Hz signal for 580mV output voltage. Adjust the semi-fixed resistors RL28 and RL29 until the DOLBY LEVEL meter may point the Dolby level. Change over the METER switch, and perform this adjustment for both R and L channels.

Next, adjust the semi-fixed resistor RL12 for 580mV output level with the DOLBY switch set to the OFF position. Check the 400Hz output signal level after the level setting of semi-fixed resistors RL11 and RL12. The output level must be precisely 580mV since it is the reference level of the Dolby circuit.

22. DOLBY FM PRESET LEVEL CONTROL ALIGNMENT PROCEDURES

Connect an FM signal generator to the FM antenna. Set the signal generator for 400Hz and 50% modulation.

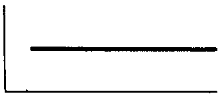
Set the FM signal generator to 98MHz and the DOLBY switch to the OFF position. Turn the Tuning knob on Model 2325 until it tunes the 98MHz signal from the FM signal generator.

Then, set the DOLBY switch to the DOLBY FM position, and adjust the FM preset level controls RC05 and RC06 until the DOLBY LEVEL meter may point the Dolby level. Change over the METER switch, and perform this adjustment for both R and L channels.

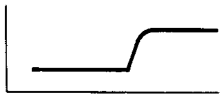
23. DESCRIPTION OF DOLBY PROCESSING CHART

This chart shows the condition of the signals available at the speakers (SPKRS) and at the TAPE MONITOR OUT terminals as a function of different control settings.

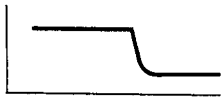
To understand the chart refer to the symbols below:



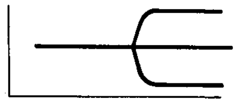
— Represents a signal which has not been applied to either Record or Playback Dolby circuits. The relative amplitudes at all audio frequencies remain unaltered at all levels.



— Represents a signal which has been processed by the Dolby Record circuit. The relative amplitudes at high frequencies are increased at low signal levels.

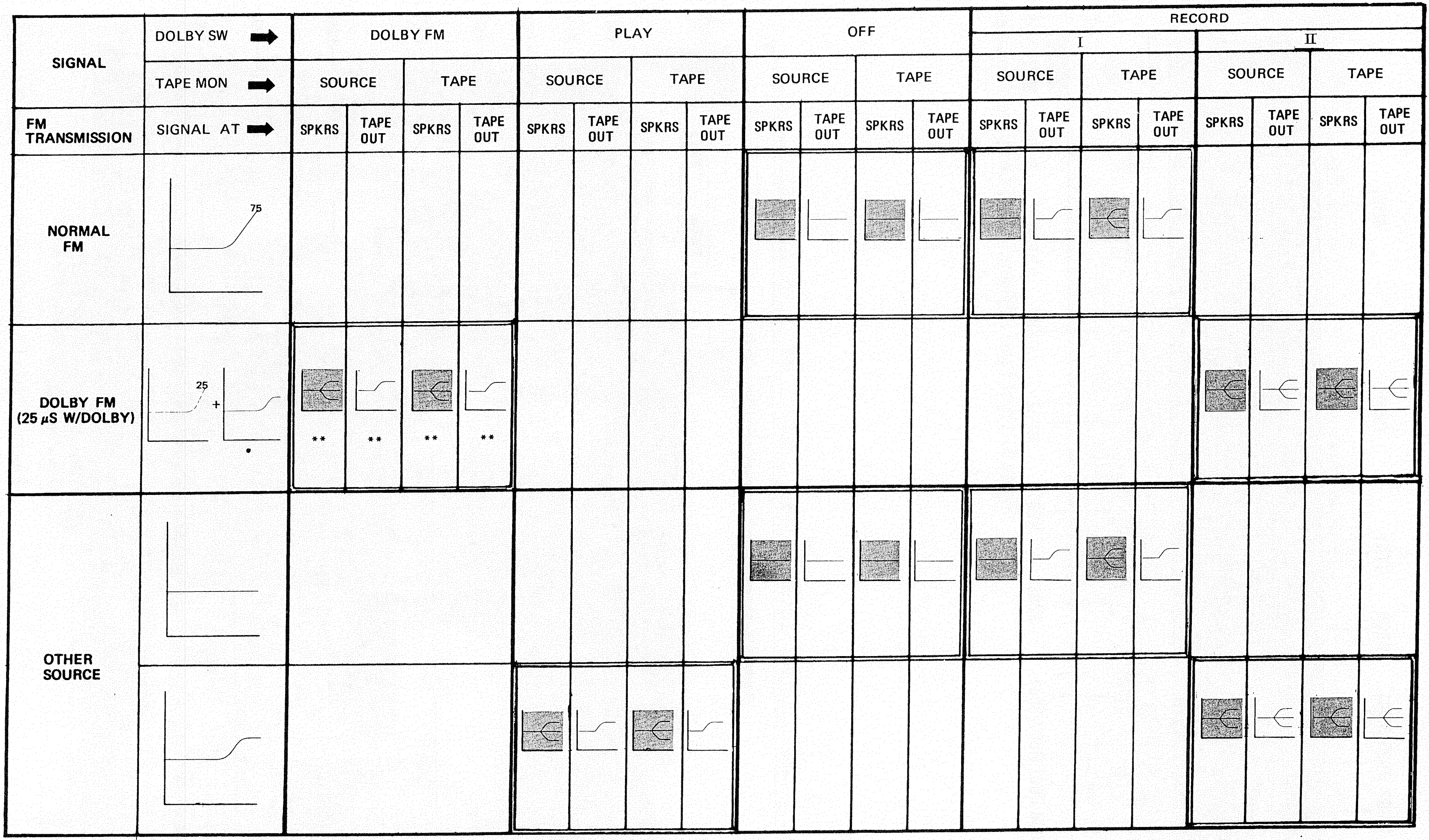


— Represents a signal which has been processed by the Dolby Playback circuit. The relative amplitudes at the high frequencies are decreased at low signal levels.



— Represents a signal which has been processed by both the Record and the Playback Dolby circuits.

The Dolby Record and Playback circuits are complementary. Therefore, relative amplitudes at all audio frequencies are restored to their original levels.


SIGNAL
DOLBY SW
TAPE MON
FM TRANSMISSION
SIGNAL AT
DOLBY FM
PLAY
OFF
RECORD
I
II
SOURCE
TAPE
SPKRS
TAPE OUT
NORMAL FM
75
DOLBY FM (25 μS W/DOLBY)
25
+
**
OTHER SOURCE

NOTE: ** DE-EMPHASIS SWITCH IN THE 25 μS POSITION.

Table 2. Dolby Processing Chart

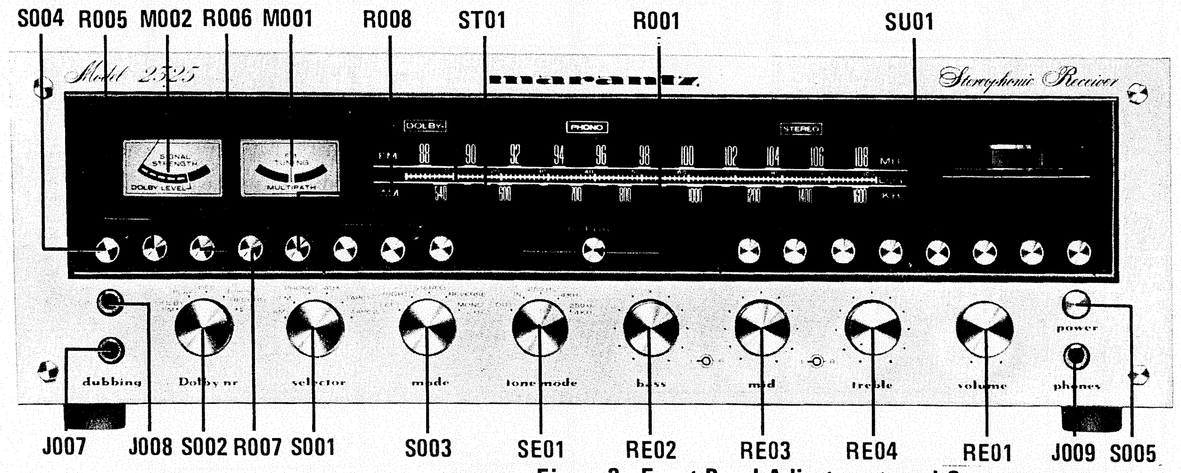

S004
R005
M002
R006
M001
R008
ST01
R001
SU01
Model 2325
marantz
Stereophonic Receiver
DOLBY
PHONO
STEREO
SIGNAL STRENGTH
DOLBY LEVEL
TUNING
MULTIPATH
dubbing
Dolby nr
selector
mode
tone mode
bass
mid
treble
volume
power
phones
J007
J008
S002
R007
S001
S003
SE01
RE02
RE03
RE04
RE01
J009
S005

Figure 3. Front Panel Adjustments and Component Locations

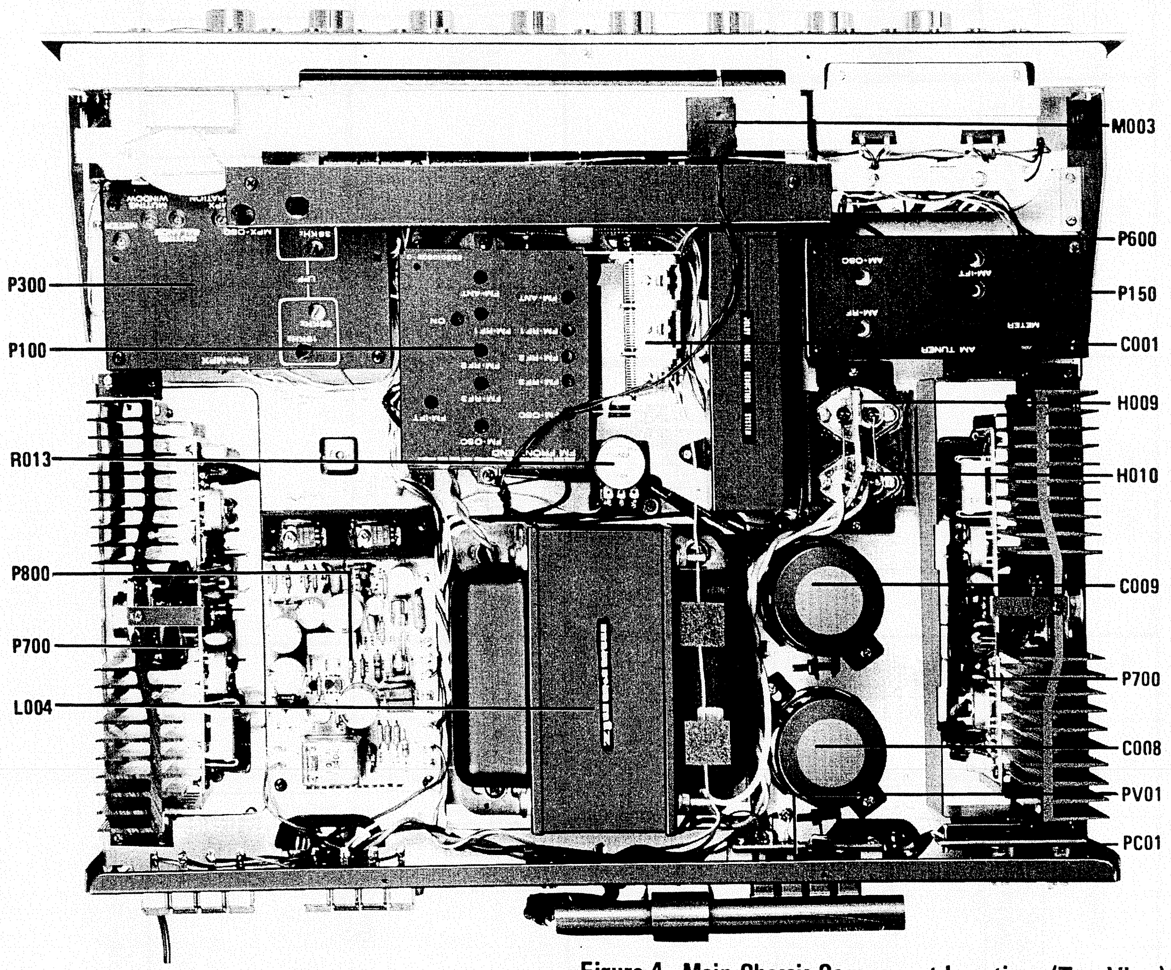

M003
P600
P300
P150
P100
C001
H009
R013
H010
P800
C009
P700
P700
L004
C008
PV01
PC01
AM TUNER
METER
AM-OSC
AM-IFT
AM-RF
MPX-OSC

Figure 4. Main Chassis Component Locations (Top View)

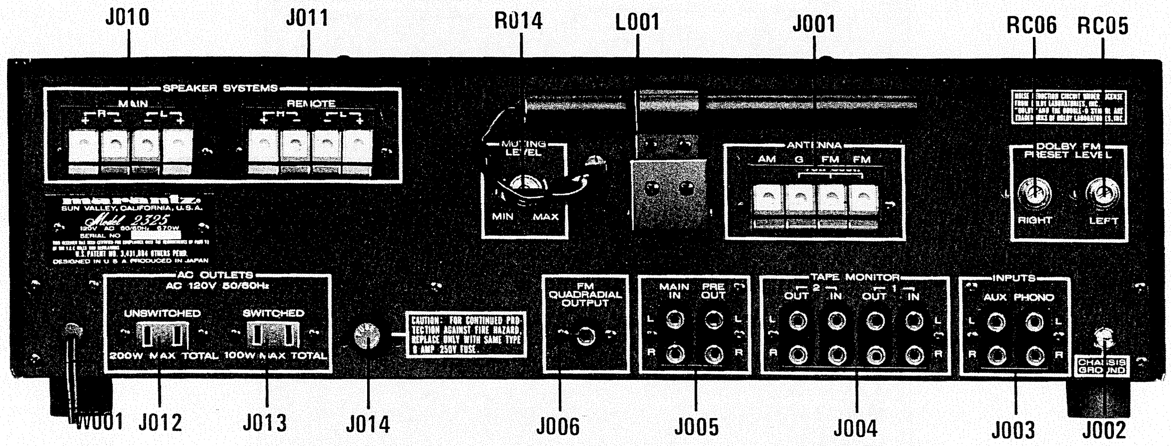

J010
J011
R014
L001
J001
RC06
RC05
SPEAKER SYSTEMS
MAIN
REMOTE
MUTING LEVEL
MIN
MAX
ANTENNA
AM
G
FM
FM
DOLBY FM PRESET LEVEL
RIGHT
LEFT
marantz
SUN VALLEY, CALIFORNIA, U.S.A.
Model 2325
120V AC 50/60Hz 670W
SERIAL NO
DESIGNED IN U.S.A. PRODUCED IN JAPAN
AC OUTLETS
AC 120V 50/60Hz
UNSWITCHED
SWITCHED
200W MAX TOTAL
100W MAX TOTAL
CAUTION: FOR CONTINUED PROTECTION AGAINST FIRE HAZARD, REPLACE ONLY WITH SAME TYPE 8 AMP 250V FUSE.
FM QUADRADIAL OUTPUT
MAIN IN
PRE OUT
TAPE MONITOR
OUT
IN
OUT
IN
INPUTS
AUX
PHONO
CHASSIS GROUND
W001
J012
J013
J014
J006
J005
J004
J003
J002

Figure 5. Rear Panel Adjustments and Component Locations

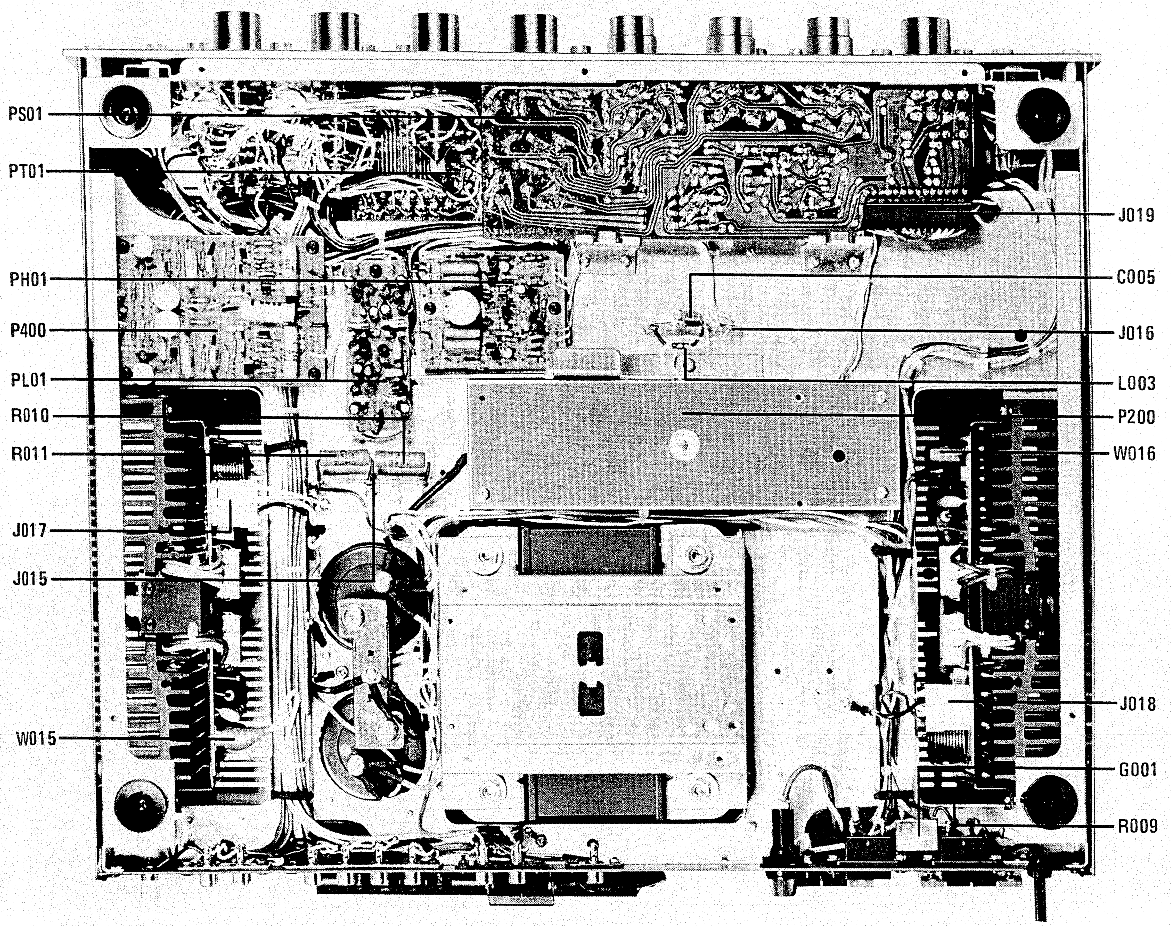

PS01
PT01
PH01
P400
PL01
R010
R011
J017
J015
W015
J019
C005
J016
L003
P200
W016
J018
G001
R009

Figure 6. Main Chassis Component Locations (Bottom View)

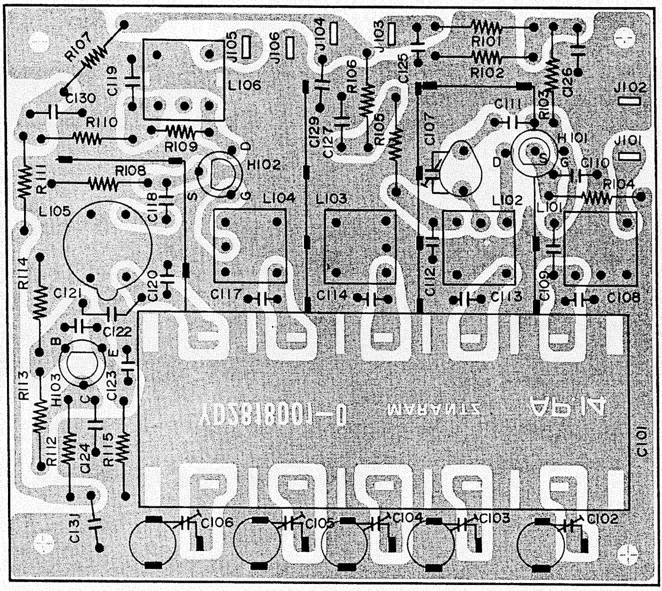

R107
C119
C130
R110
R109
L106
J105
J106
J104
J103
R101
R102
C125
C126
J102
R106
C129
C127
R105
C107
C111
R103
H101
J101
C110
R104
H102
R108
R111
C118
L104
L103
L102
L101
L105
R114
C121
C120
C122
C117
C114
C112
C113
C109
C108
H103
R113
R112
C123
C124
R115
C101
C131
C106
C105
C104
C103
C102
MARANTZ
4P14

Figure 7. FM Front End Assembly P100 Component Locations

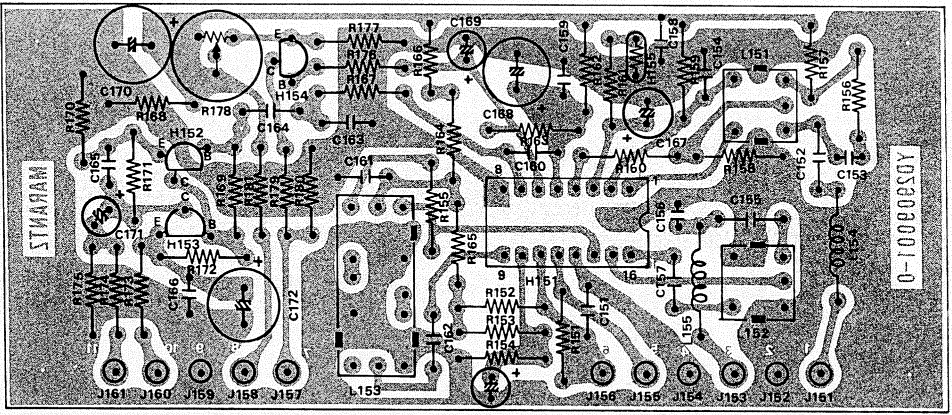

R177
C169
R176
R167
H154
R166
C159
C158
C154
L151
R157
R156
C170
R178
R168
R170
H152
C164
C163
C168
R163
C167
R164
C161
C160
R160
R158
C152
C153
MARANTZ
C165
R171
R169
R179
R174
R155
C156
C155
L154
C171
H153
R172
R165
C157
R175
R173
R177
C166
C172
R152
H151
R153
R154
C151
R151
C162
L155
L152
L153
J161
J160
J159
J158
J157
J156
J155
J154
J153
J152
J151

Figure 8. AM Tuner Assembly P150 Component Locations

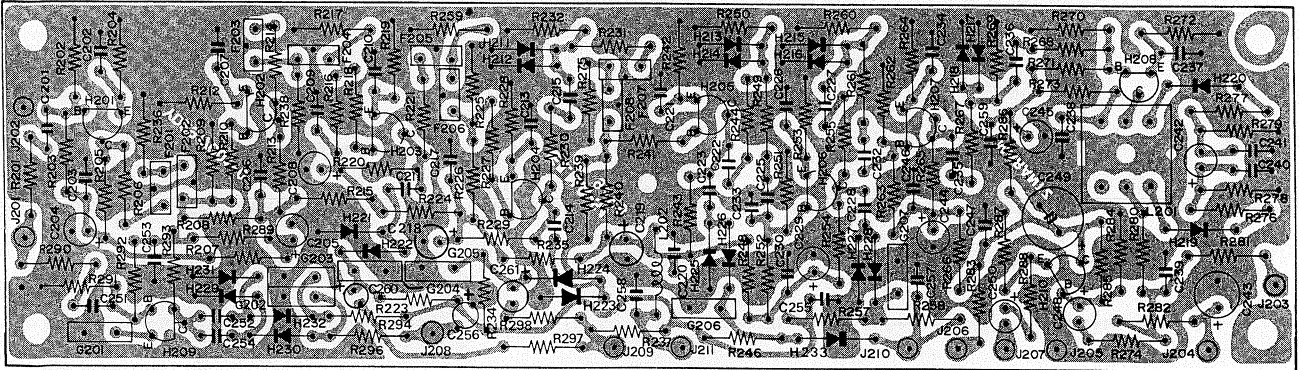

R217
R259
R232
R250
R260
R270
R272
F203
F205
F204
R211
R212
R231
H213
H214
H215
H216
H208
C237
R202
C202
R204
C201
H201
C207
R216
R218
C209
F206
R221
H205
H220
R273
R277
J201
R201
R203
R205
R206
R236
R209
R208
R213
R238
C208
R220
R215
H203
R224
H221
C218
H222
G205
R229
R235
H224
H223
C219
L202
R240
R241
R243
R246
H225
H226
C233
R248
R252
R253
R251
R254
R257
H227
H228
C246
C249
R284
R279
C241
C240
R278
R276
H219
R281
C204
R290
R292
C253
R293
R207
R289
C205
C203
H231
H225
C251
H202
C252
C254
H232
H230
G201
H209
R296
R294
R223
C260
G204
C256
J208
R298
R297
J209
R237
G206
J211
R246
H233
J210
R256
J206
J207
J205
R274
J204
J203
R282
C243

Figure 9. FM IF Amplifier Assembly P200 Component Locations

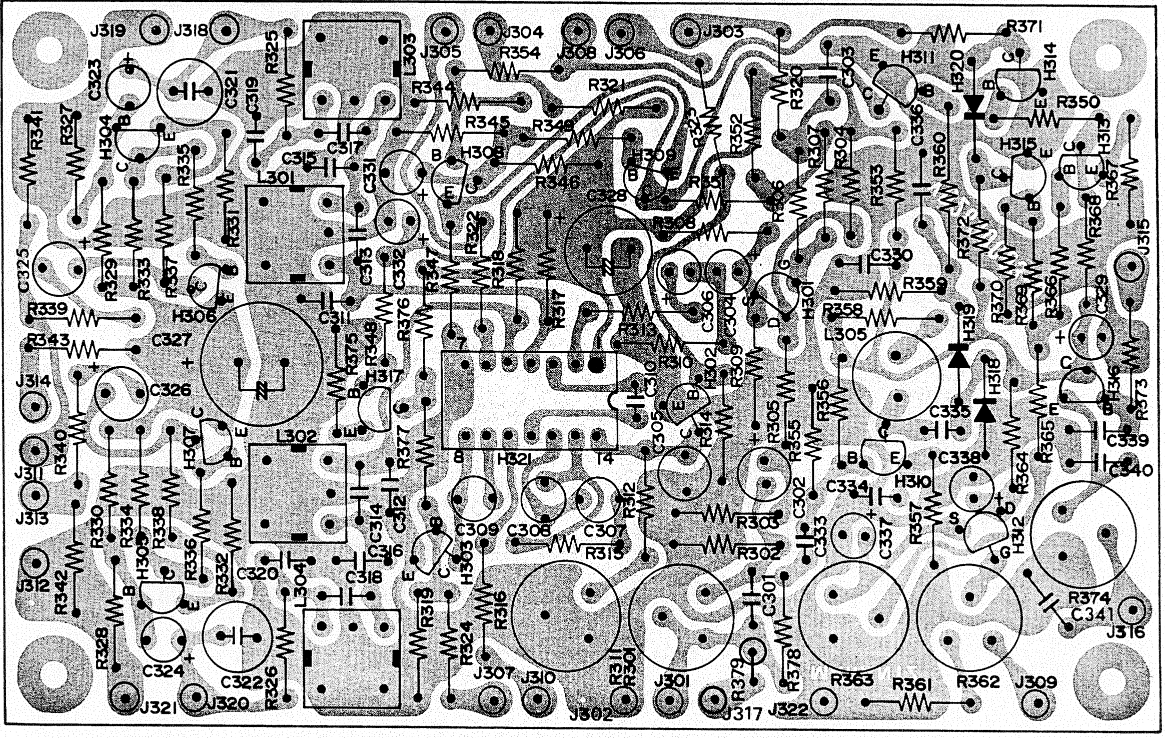
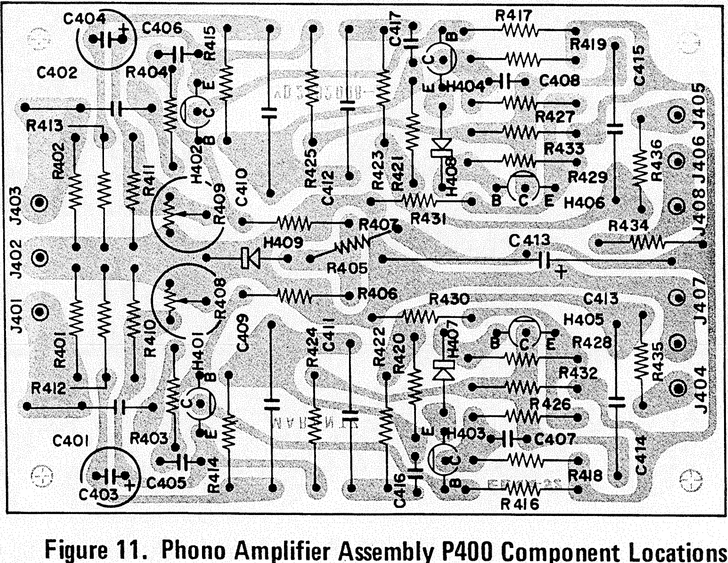

J319
J318
J304
J305
R354
J308
J306
J303
R371
R325
L303
R344
R321
H311
H320
H314
R350
C323
C321
C319
C317
R345
R349
C336
R360
R341
R327
H304
C315
H308
H309
C305
R352
R320
R307
R304
R353
H315
H313
R367
R335
R331
L301
C331
R346
C328
R323
R351
R356
R372
R368
R308
C325
R329
R333
R337
C313
C332
R322
R318
C306
C304
H301
C330
R359
R358
L305
R370
R369
R366
C329
J315
R339
H306
C311
R376
R347
R317
R313
R310
H319
R343
C327
R375
R348
H317
C310
H302
R309
R305
R356
R355
C335
H318
H316
R373
J314
C326
R377
R314
C339
H307
L302
H321
C303
C302
C334
H310
C338
R364
R365
C340
R340
J311
R330
R334
R338
C314
C312
R312
C309
C308
C307
R303
R315
R302
C333
C337
R357
H312
J313
R336
R332
C316
C320
H303
C318
R319
R324
R316
C301
R374
C341
J312
R342
L304
J316
R328
H305
C324
C322
R326
J307
J310
R311
R301
J301
R379
R378
R363
R361
R362
J309
J321
J320
J302
J317
J322

Figure 10. MPX Stereo Decoding Amplifier Assembly P300 Component Locations


C404
C406
R415
C417
R417
R419
C415
C402
R404
H404
C408
J405
R413
R427
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J406
R402
R411
H402
R409
C410
R425
C412
R423
R421
H408
R429
H406
R436
J403
R431
R407
R434
J408
J402
H409
R405
C413
J401
R406
R430
C413
H405
R408
R410
R401
H401
C409
R424
C411
R422
R420
H407
R428
R432
R435
J407
J404
R412
R426
C401
R403
H403
C407
C414
C403
C405
R414
C416
R418
R416

Figure 11. Phono Amplifier Assembly P400 Component Locations

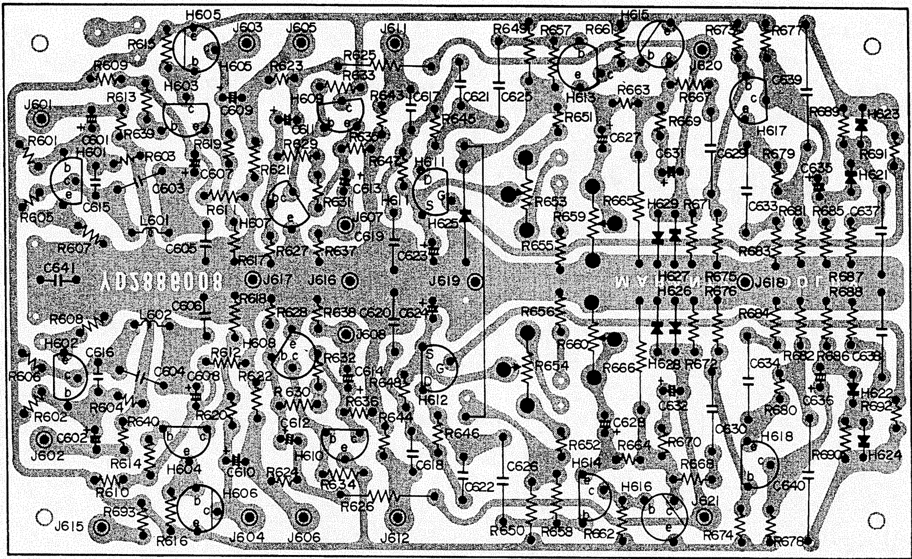
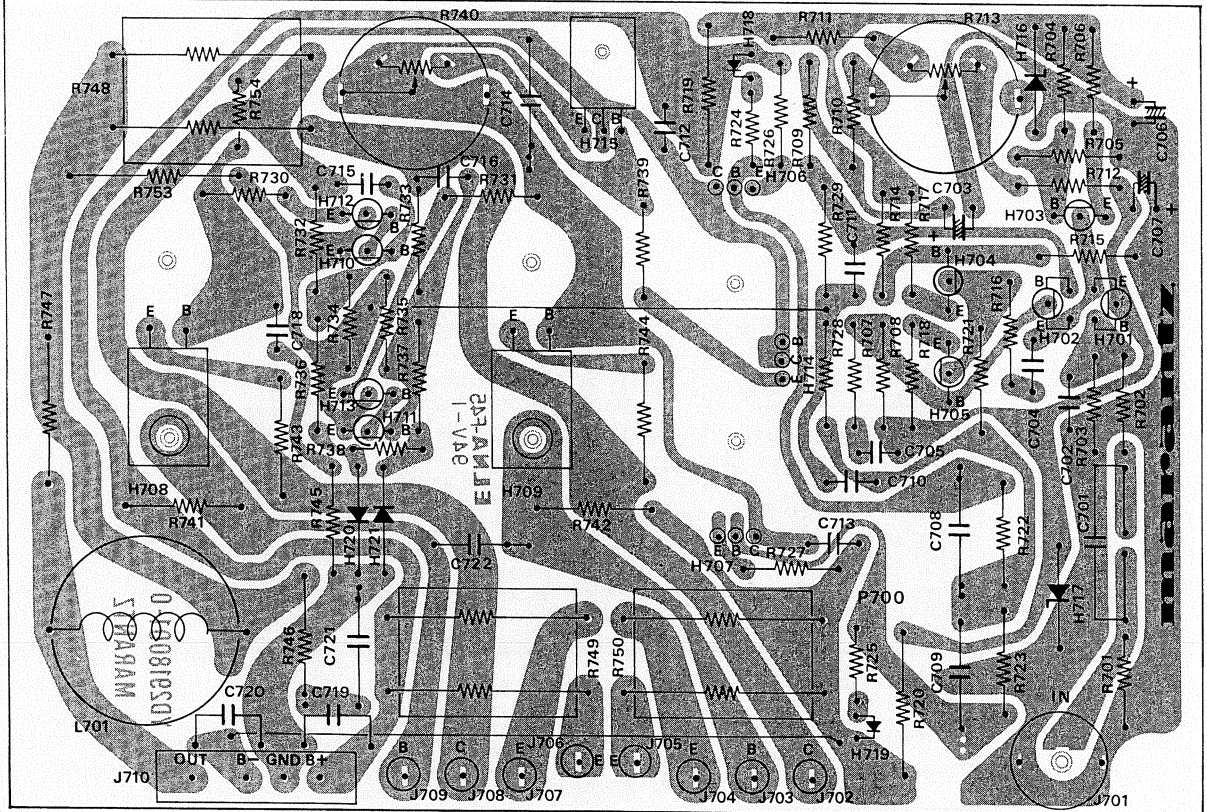

H605
J603
J605
J611
R649
R657
R661
H615
R673
R677
R615
R609
R625
R623
R613
J601
C609
R643
C617
C621
C625
H613
R651
R663
R667
R669
C639
R689
H623
R601
C601
R639
R619
R629
C611
R647
C627
C631
C629
R679
H617
R691
H601
R603
C607
R621
H611
C635
H621
C603
C615
R605
R611
H607
R631
C613
H625
R653
R665
H629
R671
C633
R681
R685
C637
L601
J607
C619
C623
R659
R607
C605
R617
R627
R637
R655
R683
C641
J617
J616
J619
H627
R675
J618
R687
R618
H626
R676
R688
R608
C606
R628
R638
C620
C624
R656
R684
L602
J608
H602
C616
R612
H608
R632
R660
H628
R672
C634
R682
R686
C638
R606
C604
C608
R622
C614
R648
R654
R666
R630
H612
H622
R602
R604
R640
R620
R636
R644
C628
C632
R680
C636
R692
C602
C612
R646
H618
J602
H610
R652
R664
R670
C630
R690
H624
R614
H604
C610
R624
C618
C626
H614
R668
R610
R634
C622
H616
C640
R693
H606
R626
J621
J615
R616
J604
J606
J612
R650
R658
R662
R674
R678
b
c
e
G
D
S

Figure 12. Dolby Unit Assembly P600 Component Locations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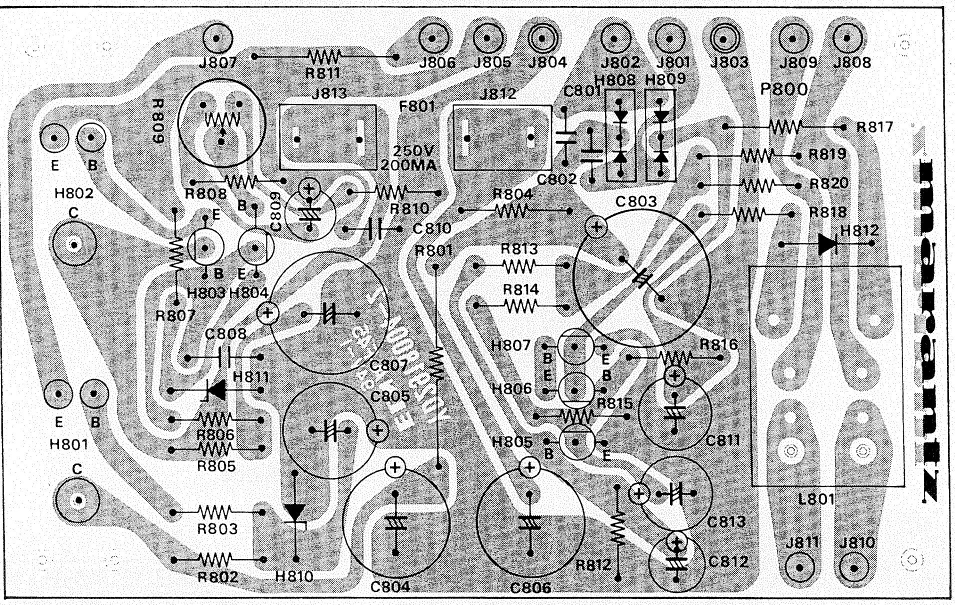
R711
R713
H718
H716
R704
R706
R748
R754
C714
R719
R724
R726
R709
R710
C706
R705
E C B
H715
C712
R712
C703
H706
R730
C715
C716
R753
R731
H712
R733
R739
R729
R714
R717
H703
R732
H710
C711
B
H704
R715
C707
R747
E B
C718
R734
R735
R744
R728
R707
R708
R718
R721
R716
H702
H701
R736
R737
H714
H713
H711
H705
R743
R738
C705
C704
C702
R703
R702
H708
C710
R741
H709
R745
R742
H720
H721
C713
C708
R722
C701
C722
E B C
R727
H707
P700
H717
R746
C721
R749
R750
R725
C709
R723
R701
C720
C719
IN
L701
R720
OUT
B-
GND
B+
J706
J705
H719
J710
J709
J708
J707
J704
J703
J702
J701
E
C

Figure 13. Power Amplifier Assembly P700 Component Locations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R811
J806
J805
J804
J802
J801
J803
J809
J808
H808
H809
P800
R809
J813
F801
J812
C801
R817
R819
R820
R818
H812
250V
200MA
C802
E
B
H802
C
R808
R810
C809
C810
R804
C803
R801
R813
R814
H803
H804
R807
C808
C807
H807
R816
H811
C805
H806
R815
E
B
H801
R806
R805
H805
C811
C813
L801
R803
C812
J811
J810
R802
H810
C804
C806
R812
marantz

Figure 14. Power Supply and Protection Relay Circuit Assembly P800 Component Locations

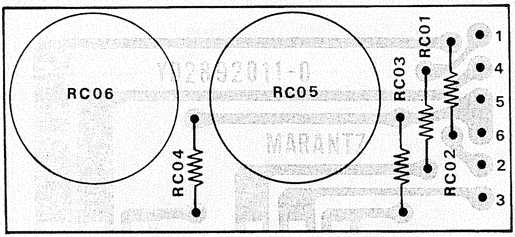
RC06
RC05
RC04
RC03
RC01
RC02
MARANTZ
1
4
5
6
2
3

Figure 15. FM Cal. and De-Emphasis Assembly PC01 Component Locations

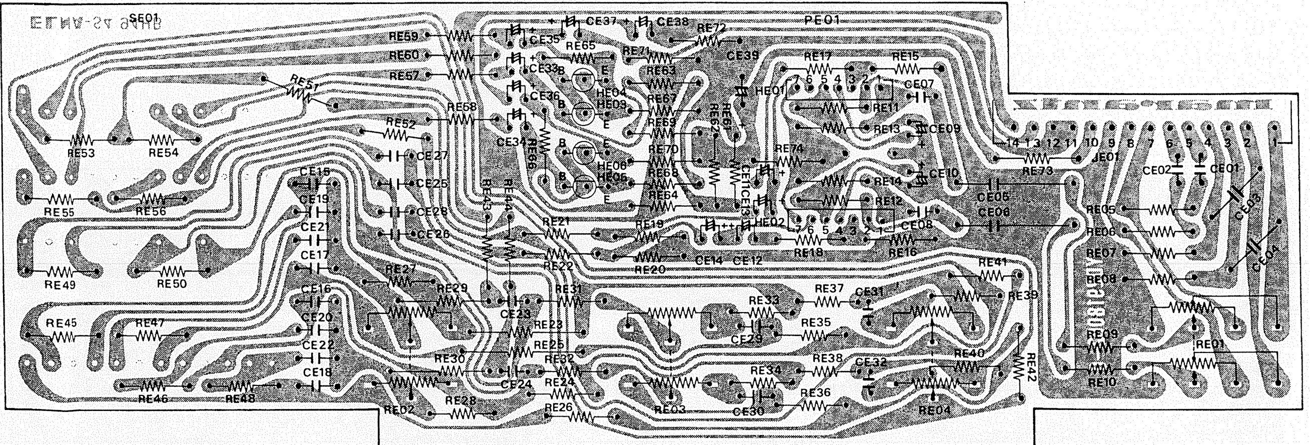
PE01
RE59
RE60
RE57
RE51
RE53
RE54
RE55
RE56
RE49
RE50
RE45
RE47
RE46
RE48
RE52
RE58
CE37
CE38
CE35
CE33
CE36
CE34
RE65
RE72
RE71
RE63
RE67
RE69
RE70
RE68
RE64
RE66
RE43
RE44
CE39
HE01
HE02
HE03
HE04
HE05
HE06
RE17
RE15
RE11
RE13
CE07
CE09
RE74
RE14
RE12
CE10
CE08
CE05
CE06
RE18
RE16
CE14
CE12
RE73
JE01
CE02
CE01
CE03
CE04
RE05
RE06
RE07
RE08
RE09
RE01
RE10
CE15
CE19
CE21
CE17
CE16
CE20
CE22
CE18
CE27
CE25
CE28
CE26
RE21
RE19
RE22
RE20
RE27
RE29
RE31
CE23
RE23
RE25
RE30
RE32
CE24
RE24
RE28
RE26
RE02
RE03
RE33
RE35
CE29
RE37
CE31
RE39
RE41
RE34
RE38
CE32
RE36
CE30
RE40
RE42
RE04
14
13
12
11
10
9
8
7
6
5
4
3
2
1

Figure 16. Pre and Tone Amplifier Assembly PE01 Component Locations

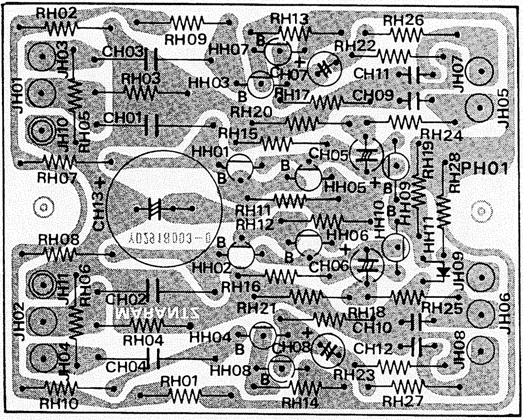
RH02
RH09
RH13
RH26
HH07
RH22
CH03
CH07
CH11
JH03
JH01
RH03
HH03
RH17
CH09
JH07
JH05
CH01
RH20
RH15
RH24
JH10
RH05
HH01
CH05
RH19
RH28
PH01
RH07
HH05
HH09
CH13
RH11
RH12
HH10
HH11
YD2918003-0
RH08
HH06
HH02
CH06
JH09
JH11
RH06
RH16
CH02
MARANTZ
RH21
RH18
RH25
JH02
CH10
RH04
HH04
CH12
JH06
CH08
JH04
CH04
HH08
RH01
RH23
JH08
RH10
RH14
RH27

Figure 17. Buffer Amplifier Assembly PH01 Component Locations

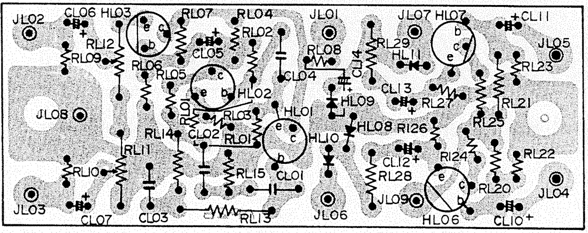
JL02
CL06
HL03
RL07
RL04
JL01
JL07
HL07
CL11
RL12
RL09
RL02
RL29
HL11
JL05
RL06
CL05
RL08
CL14
RL05
CL04
RL23
CL13
JL08
HL02
HL09
RL27
RL21
RL03
HL01
RL14
CL02
RL01
HL08
RL26
RL25
RL11
HL10
CL12
RL24
RL22
RL10
RL15
CL01
RL28
RL20
JL04
JL03
CL07
CL03
RL13
JL06
JL09
HL06
CL10

Figure 18. Dolby, Tone and Meter Assembly PL01 Component Locations

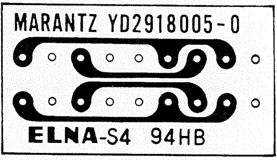
MARANTZ YD2918005-0
ELNA-S4 94HB

Figure 19. Dolby Tone, Tape Mon. Assembly PS01 Component Locations

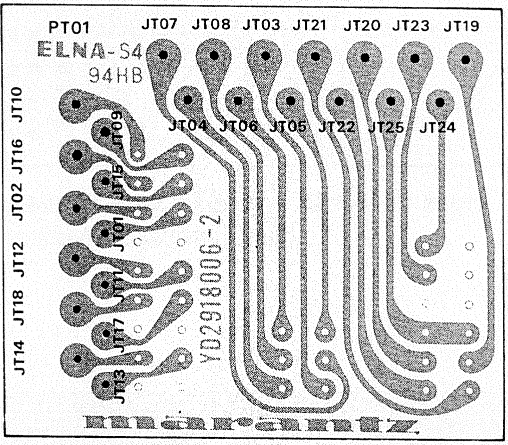
PT01
JT07
JT08
JT03
JT21
JT20
JT23
JT19
ELNA-S4
94HB
JT04
JT06
JT05
JT22
JT25
JT24
JT10
JT16
JT02
JT12
JT18
JT14
JT09
JT15
JT01
JT11
JT17
JT13
YD2918006-2
marantz

Figure 20. Tape Monitor Assembly PT01 Component Locations

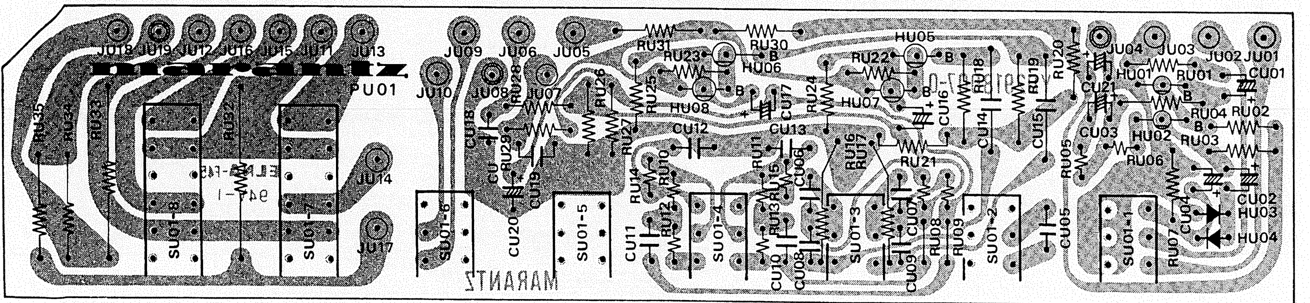
JU18
JU19
JU12
JU16
JU15
JU11
JU13
PU01
JU09
JU06
JU05
JU10
JU08
JU07
RU31
RU23
RU30
HU06
HU05
RU22
JU04
JU03
JU02
JU01
HU01
RU01
CU01
RU35
RU34
RU33
RU32
RU26
RU25
RU27
HU08
CU12
CU13
CU17
RU24
HU07
CU16
RU18
RU19
RU20
CU14
CU15
CU21
RU04
RU02
CU03
HU02
RU03
RU06
CU02
HU03
HU04
RU05
RU21
RU16
RU17
CU06
RU11
RU10
RU14
RU12
RU13
RU15
CU18
RU29
RU28
CU19
CU20
CU11
CU10
CU08
CU07
CU09
RU08
RU09
CU05
CU04
RU07
JU14
JU17
SU01-8
SU01-7
SU01-6
SU01-5
SU01-4
SU01-3
SU01-2
SU01-1
ELNA-S4
94HB
MARANTZ

Figure 21. Multipath, Hi Blend, FM Muting, Low Filter, Hi Filter, Loudness, Main Speaker and Remote Speaker Assembly PU01 Component Locations

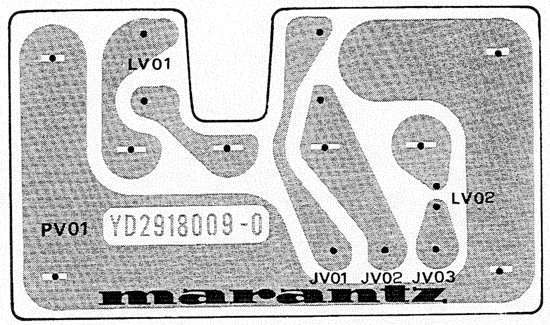
LV01
LV02
PV01
YD2918009-0
JV01 JV02 JV03
marantz

Figure 22. Antenna Terminal Assembly PV01 Component Locations

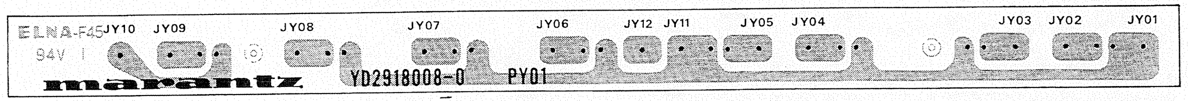
ELNA-F45
94V
JY10 JY09 JY08 JY07 JY06 JY12 JY11 JY05 JY04 JY03 JY02 JY01
marantz
YD2918008-0
PY01

Figure 23. Function Lamp Assembly PY01 Component Locations

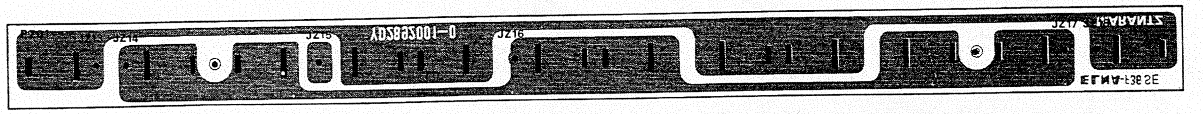

Figure 24. Dial Lamp Assembly PZ01 Component Locations

NOTE

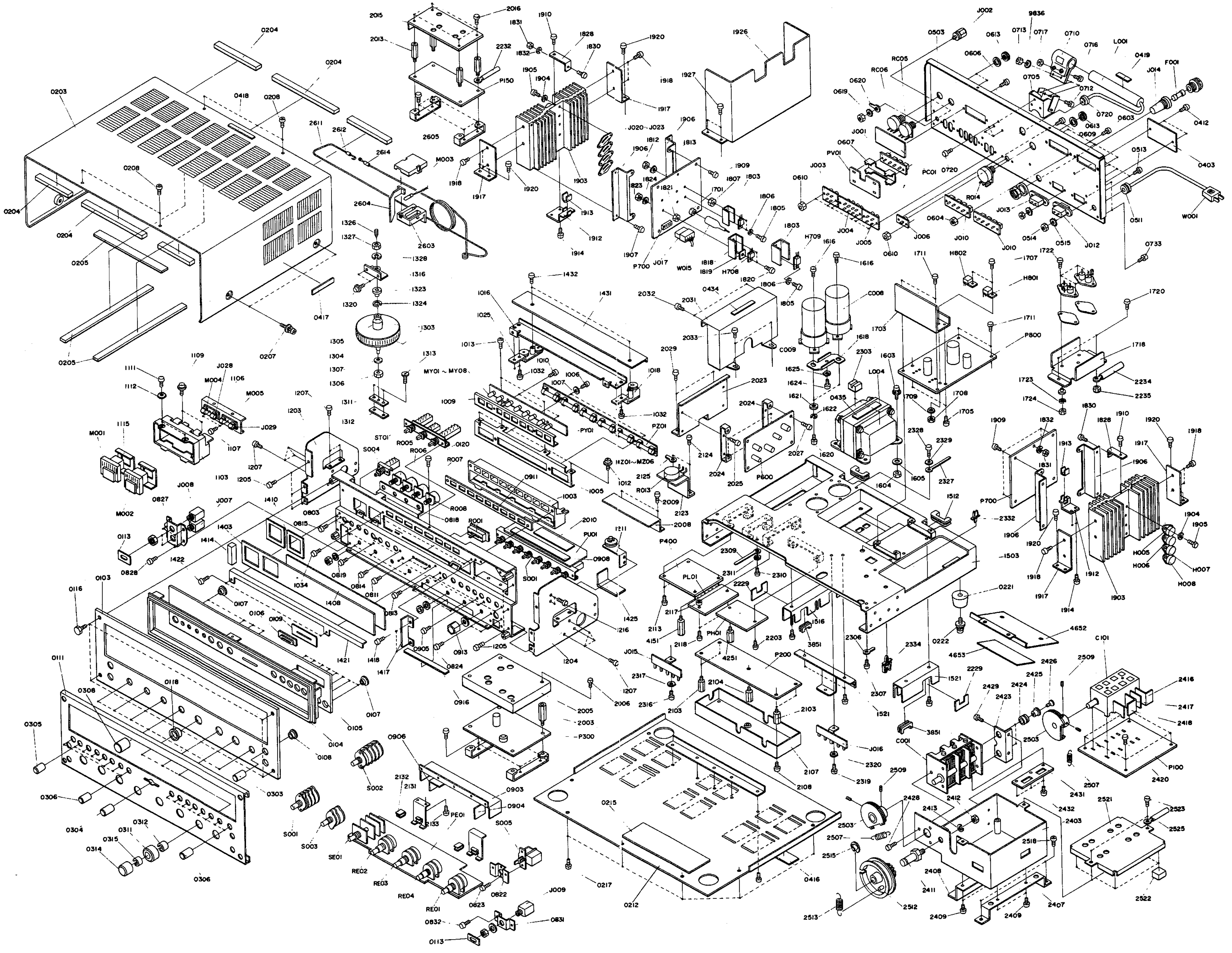
0204
0204
0203
0418
0208
0208
0204
0204
0205
0205
0417
0207
2611
2612
2614
2604
2603
M003
2605
2015
2013
2016
1831
1910
1828
1830
2232
1832
P150
1905
1904
1920
1918
1917
1918
1917
1920
1903
1913
1912
1914
1926
1927
1906
J020~J023
1812
1813
1906
1909
1807
1803
1821
1824
823
1701
1806
1805
1803
1907
P700
J017
W015
1818
1819
H708
H709
1616
1616
1820
1806
1805
J002
9836
0503
0613
0713
0717
0710
0716
L001
0419
J014
F001
0606
RC05
RC06
0620
0705
0712
0619
0720
0603
0613
0609
0412
J001
PV01
0607
PC01
0720
J003
0610
R014
J013
0604
J004
J005
J006
J010
0514
0515
J012
0511
0513
0403
W001
0733
0610
1711
H802
1722
1707
H801
1720
1711
P800
1718
2234
2235
1723
1724
1326
1327
1328
1316
1323
1324
1320
1303
1305
1313
1304
1307
1306
MY01 ~ MY08
1311
1312
1432
1016
1431
1025
1013
1010
1032
1007
1006
1018
1009
1032
PY01
PZ01
2032
2031
0434
C008
2033
C009
2029
1625
1618
2303
1603
1624
L004
1621
1622
0435
1709
1708
1705
2023
2024
2124
2024
2025
P600
2027
1620
2328
2329
2327
1605
1604
1512
1111
1109
J028
1112
M004
1106
M005
1207
1203
J029
1115
M001
1107
1207
1205
1103
ST01
S004
R005
R006
0120
R007
0911
1003
1005
1012
1HZ01 ~ MZ06
2125
R013
2009
2123
2008
J008
0827
M002
J007
1410
0803
0815
0818
R008
R001
2010
PU01
0908
1211
P400
0113
1403
1414
1422
0828
0819
0814
0811
1034
1408
S001
0116
0103
0107
0106
0109
0813
1425
1216
1204
1205
0913
0905
0824
1418
1417
1421
0111
0308
0118
0107
0105
0104
0108
0305
0306
0303
0304
0311
0312
0315
0314
0306
0916
2005
2003
P300
2006
1207
J015
2317
2316
0906
S002
2132
2131
PE01
2133
0903
0904
S005
S001
S003
SE01
RE02
RE03
RE04
RE01
0822
0823
J009
0832
0831
0113
0215
0217
0212
0416
1909
1832
1830
1828
1910
1920
1918
1913
1831
1917
1906
P700
2332
1906
1920
1904
1905
1503
H005
H006
H007
H008
1918
1917
1914
1912
1903
0221
0222
4652
C101
4653
2229
2426
2509
2425
2429
2424
2423
2416
2417
2418
2503
P100
2420
2507
2431
2432
2403
2521
2523
2525
2518
2522
2407
2409
2409
2408
2411
2412
2413
2428
2509
C001
3851
1521
1521
2334
2307
2306
1516
3851
2203
P200
4251
PH01
2118
4151
2113
2117
2229
2311
2310
PL01
2309
2104
2103
2103
2107
2108
J016
2320
2319
2503
2507
2515
2513
2512

Figure 25. Exploded Mechanical Diagram

PARTS LIST

U ..... U.S.A.
E ..... Europe

REF. DESIG.	U	E	PART NO.	DESCRIPTION
A	1	1	291806340	Front Panel Assembly
0103	1	1	291806301	Escutcheon
0104	1	1	289240101	Frame
0105	1	1	291815801	Window
0106	1	1	285425901	Bush
0107	12	12	288625901	Bush
0108	1	1	288625901	Bush
0109	1	1	291510701	Sheet
0111	1	1	291805301	Cover
B	1	1	289225742	Top Lid Assembly
0203	1	1	289225701	Lid
0204	4	4	257711807	Spacer
0205	3	3	289205602	Buffer
0417	1	1	257886102	Label Do Not Remove ··········
0418	1	1	257886103	Label See Marking ···············
4651	2	2	291805601	Buffer
C	1	1	291825740	Bottom Lid Assembly
0212	1	1	291825750	Lid K
0215	1	1	291512001	Insulator
D	3	3	281815440	Knob Assembly, Bottom
0311	3	3	281815404	Knob
0312	3	3	71400149Q	Spring
E	3	3	281815441	Knob Assembly, Top
0314	3	3	281815405	Knob
0315	3	3	71400159Q	Spring
F	1	1	291510342	Pointer Assembly
2603	1	1	291510301	Pointer
2604	1	1	285010301	Pointer
2605	1	1	291510302	Cover
M003	1	1	IN1008030	Lamp
G	1	1	120200640	Hook Assembly
2611	1	1	72080802A	String
2612	1	1	120225801	Hook
H	1	1	285327340	Fly Wheel Assembly
1303	2	2	257706302	Escutcheon
1304	1	1	257727301	Fly Wheel
1305	1	1	285311201	Shaft
1306	1	1	53110603E	Hexagon Nut
1307	1	1	54020601E	Flat Washer P
				GENERAL MISCELLANEOUS
2420	4	4	51100306S	B. H. M. Screw B 3x6
2507	2	2	71101669Q	Spring
2515	1	1	64000400R	RG Ring E
				FM FRONT END CIRCUIT BOARD-P100
P100	1	1	YD2818001	P. W. Board, FM RF (Print Only)
	1	1	ZZ2818001	P. W. Board Assembly
				P100-RESISTORS
				All resistors are ±5% and ¼W
R101	1	1	RT0556314	56KΩ
R102	1	1	RT0510514	1MΩ
R103	1	1	RT0510414	100KΩ
R104	1	1	RT0510114	100Ω
R105	1	1	RT0522114	220Ω
R106	1	1	RT0510114	100Ω
R107	1	1	RT0510114	100Ω
R108	1	1	RT0547214	4.7KΩ
R109	1	1	RT0522314	22KΩ
R110	1	1	RT0510214	1KΩ
R111	1	1	RT0510114	100Ω
R112	1	1	RT0510114	100Ω
R113	1	1	RT0522314	22KΩ
R114	1	1	RT0522314	22KΩ
R115	1	1	RT0512214	1.2KΩ
				P100-CAPACITORS
C101	1	1	CA5000001	Variable, FM 5 Gang
C102	1	1	CT1100001	Trimming, 1.5~11.5PF
C103	1	1	CT1100001	Trimming, 1.5~11.5PF
C104	1	1	CT1100001	Trimming, 1.5~11.5PF
C105	1	1	CT1100001	Trimming, 1.5~11.5PF
C106	1	1	CT1100001	Trimming, 1.5~11.5PF
C107	1	1	CT1100002	Trimming, 1.5~11.5PF
C108	1	1	DD1615001	Ceramic, 15PF±10%, 50V
C109	1	1	DK1710201	Ceramic, 1000PF±10%, 50V
C110	1	1	DK1810301	Ceramic, 0.1μF+100%,-0%, 50V
C111	1	1	DD1105001	Ceramic, 5PF±0.5PF
C112	1	1	DK1710201	Ceramic, 1000PF±2%
C113	1	1	DD1615001	Ceramic, 15PF±10%
C114	1	1	DD1620001	Ceramic, 20PF±10%
C115	1	1	DD1001002	Ceramic, 10PF±0.25PF
C116	1	1	DD1600601	Ceramic, 0.6PF±10%
C117	1	1	DD1620001	Ceramic, 20PF±10%
C118	1	1	DK1710201	Ceramic, 1000PF±20%
C119	1	1	DK1710301	Ceramic, 0.1μF±20%
C120	1	1	DD1620003	Ceramic, 20PF±10%
C121	1	1	DD1210006	Ceramic, 10PF±10%
C122	1	1	DD1615003	Ceramic, 15PF±10%
C123	1	1	DD1615003	Ceramic, 15PF±10%
C124	1	1	DK1710301	Ceramic, 0.01μF±20%
C125	1	1	DK1810301	Ceramic, 0.01μF+100%,-0%
C126	1	1	DK1810301	Ceramic, 0.01μF+100%,-0R
C127	1	1	DK1710301	Ceramic, 0.01μF±20%
C129	1	1	DK1710301	Ceramic, 0.01μF±20%
C130	1	1	DK1710301	Ceramic, 0.01μF±20%
C131	1	1	DK1710301	Ceramic, 0.01μF±20%
				P100-MISCELLANEOUS
L101	1	1	LA1027801	Ant. Coil
L102	1	1	LA1027802	RF Coil
L103	1	1	LA1027803	RF Coil
L104	1	1	LA1027804	RF Coil
L105	1	1	LO1202604	OSC Coil
L106	1	1	LI1001601	IFT
H101	1	1	HF200191A	Transistor, 2SK19Y
H102	1	1	HF200191A	Transistor, 2SK19Y
H103	1	1	HT305351B	Transistor, 2SC535B
J101	1	1	YP1000094	Plug
J102	1	1	YP1000094	Plug
J103	1	1	YP1000094	Plug
J104	1	1	YP1000094	Plug
J105	1	1	YP1000094	Plug
J106	1	1	YP1000094	Plug
				GENERAL MISCELLANEOUS
2416	1	1	281810903	Shield
2417	2	2	281810904	Shield
2418	1	1	281810905	Shield
2403	1	1	281810950	Shield K
2407	1	1	289016006	Bracket
2408	1	1	281816008	Bracket
2409	4	4	51570306B	P.H. Tapt Screw P3 x 6ST
2411	1	1	281811201	Shaft

U ..... U.S.A.
E ..... Europe

REF. DESIG.	U	E	PART NO.	DESCRIPTION
2412	1	1	53110403E	Hexagon Nut
2413	1	1	54040402N	Spring Washer
2423	1	1	281810908	Shield
2424	2	2	114325901	Bush
2425	2	2	114325902	Bush
2426	2	2	51040308A	F. H. M. Screw F 3x8
2428	3	3	51100304E	B. H. M. Screw B 3x4
2429	2	2	51100304E	B. H. M. Screw B 3x4
2431	1	1	281805102	Guide
2432	3	3	51060306A	P. H. M. Screw P 3x6
C001	1	1	CA0330002	Variable Cap.
2512	1	1	289215901	Drum
2513	1	1	71101569M	Spring
2503	2	2	281805850	Gear K
2509	4	4	51064019A	Screw
				AM TUNER CIRCUIT BOARD-P150
P150	1	1	YD2909001	P. W. Board, AM Tuner (Print Only)
	1	1	ZZ2918101	P. W. Board Assembly
				P150-RESISTORS **All resistors are ±5% and ¼W, unless otherwise indicated.**
R151	1	1	RT0510314	10KΩ
R152	1	1	RT0530314	30KΩ
R153	1	1	RT0582314	82KΩ
R154	1	1	RT0522314	22KΩ
R156	1	1	RT0515414	150KΩ
R157	1	1	RC0000014	0Ω
R158	1	1	RT0539314	39KΩ
R159	1	1	RT0539214	3.9KΩ
R160	1	1	RC0000012	0Ω
R161	1	1	RT0543214	4.3KΩ
R162	1	1	RT0510114	100Ω
R163	1	1	RT0515214	1.5KΩ
R164	1	1	RT0533114	330Ω
R165	1	1	RC0000014	0Ω
R166	1	1	RC0000014	0Ω
R167	1	1	RT0522214	2.2KΩ
R168	1	1	RT0582314	82KΩ
R169	1	1	RT0562414	620KΩ
R170	1	1	RT0551114	510Ω
R171	1	1	RT0520214	2KΩ
R172	1	1	RT0556214	5.6KΩ
R173	1	1	RT0510114	100Ω
R174	1	1	RT0510114	100Ω
R175	1	1	RT0510414	100KΩ
R176	1	1	RT0510314	10KΩ
R177	1	1	RT0512314	12KΩ
R178	1	1	RA0103025	Trimming, 10KΩ (B)
R179	1	1	RT0512314	12KΩ
R180	1	1	RT0515214	1.5KΩ
R181	1	1	RT0510114	100Ω
R182	1	1	RT0515214	1.5KΩ
				P150-CAPACITORS
C151	1	1	DK1710301	Ceramic, 0.01μF ±20%
C152	1	1	DF1747305	Film, 0.047μF ±20%
C153	1	1	DD1620001	Ceramic, 20PF ±10%
C154	1	1	DK1710301	Ceramic, 0.01μF ±20%
C155	1	1	DF6545101	Film, 450PF ±5%

REF. DESIG.	U	E	PART NO.	DESCRIPTION
C156	1	1	DD1615001	Ceramic, 15PF ±10%
C157	1	1	DK1710301	Ceramic, 0.01μF ±20%
C158	1	1	DK1840302	Ceramic, 0.04μF +80%,-20%
C159	1	1	DK1840302	Ceramic, 0.04μF +80%,-20%
C160	1	1	DK1710301	Ceramic, 0.01μF ±20%
C161	1	1	DK1710301	Ceramic, 0.01μF ±20%
C162	1	1	DK1710301	Ceramic, 0.01μF ±20%
C163	1	1	DF1615305	Film, 0.015μF ±10%
C164	1	1	DF1633305	Film, 0.033μF ±10%
C165	1	1	DF1756205	Film, 5600PF ±20%
C166	1	1	DK1840302	Film, 0.04μF +80%,-20%
C167	1	1	EA2260169	Electroly, 22μF, 16V
C168	1	1	EA1070169	Electroly, 100μF, 16V
C169	1	1	EA4750359	Electroly, 4.7μF, 35V
C170	1	1	EA1070169	Electroly, 100μF, 16V
C171	1	1	EA1050509	Electroly, 1μF, 50V
C172	1	1	EA1070169	Electroly, 100μF, 16V
C173	1	1	EA4750359	Electroly, 4.7μF, 35V
				P150-MISCELLANEOUS
H151	1	1	HC1000506	IC μPC30C
H152	1	1	HT313272A	Tranistor, 2SC1327
H153	1	1	HT104942A	Transistor, 2SA494
H154	1	1	HT104942A	Transistor, 2SA494
H155	1	1	HH0000212	Thermistor, 31D27
L151	1	1	LA1001019	RF Coil, AM
L152	1	1	LO1001050	OSC Coil, AM
L153	1	1	LI1028003	IFT, AM Ceramic Filter
L154	1	1	LC1332002	Choke Coil, 3.3μH
L155	1	1	LC1332002	Choke Coil, 3.3μH
J151	1	1	YP1000113	Plug
J152	1	1	YP1000113	Plug
J153	1	1	YP1000113	Plug
J155	1	1	YP1000113	Plug
J156	1	1	YP1000113	Plug
J157	1	1	YP1000113	Plug
J158	1	1	YP1000113	Plug
J159	1	1	YP1000113	Plug
J160	1	1	YP1000113	Plug
J161	1	1	YP1000113	Plug
				FM IF CIRCUIT BOARD-P200
P200	1	1	YD2917001	P. W. Board, FM IF (Print Only)
	1	1	ZZ2918114	P. W. Board Assembly
				P200-RESISTORS **All resistors are ±5% and ¼W, unless otherwise indicated.**
R201	1	1	RT0515114	150Ω
R202	1	1	RT0582214	8.2KΩ
R203	1	1	RT0518314	18KΩ
R204	1	1	RT0510214	1KΩ
R205	1	1	RT0533114	330Ω
R206	1	1	RC0000014	0Ω, ¼W
R207	1	1	RT0547014	47Ω
R208	1	1	RT0533214	3.3KΩ
R209	1	1	RT0515214	1.5KΩ
R210	1	1	RT0515114	150Ω
R212	1	1	RT0510214	1KΩ
R213	1	1	RT0533114	330Ω
R214	1	1	RC0000014	0Ω, ¼W

U ..... U.S.A.
E ..... Europe

REF. DESIG.	U	E	PART NO.	DESCRIPTION
R215	1	1	RT0547014	47Ω
R216	1	1	RT0533214	3.3KΩ
R217	1	1	RT0515214	1.5KΩ
R218	1	1	RT0515114	150Ω
R219	1	1	RT0510214	1KΩ
R220	1	1	RT0533114	330Ω
R221	1	1	RC0000014	0Ω, ¼W
R223	1	1	RT0547314	47KΩ
R224	1	1	RT0547014	47Ω
R225	1	1	RT0515214	1.5KΩ
R226	1	1	RT0533214	3.3KΩ
R227	1	1	RT0515114	150Ω
R228	1	1	RT0556114	560Ω
R229	1	1	RT0575014	75Ω
R230	1	1	RC0000014	0Ω, ¼W
R231	1	1	RT0575014	75Ω
R232	1	1	RT0510414	100KΩ
R234	1	1	RT0568314	68KΩ
R235	1	1	RT0547014	47Ω
R236	1	1	RT0582114	820Ω
R237	1	1	RT0510214	1KΩ
R238	1	1	RT0582114	820Ω
R239	1	1	RT0515214	1.5KΩ
R240	1	1	RT0533214	3.3KΩ
R241	1	1	RT0515114	150Ω
R242	1	1	RT0510214	1KΩ
R243	1	1	RT0510214	1KΩ
R244	1	1	RT0515114	150Ω
R246	1	1	RT0568314	68KΩ
R248	1	1	RT0547014	47Ω
R249	1	1	RT0515114	150Ω
R250	1	1	RT0510414	100KΩ
R251	1	1	RT0582214	8.2KΩ
R252	1	1	RT0515314	15KΩ
R253	1	1	RT0510214	1KΩ
R254	1	1	RT0510214	1KΩ
R255	1	1	RT0515114	150Ω
R257	1	1	RT0539314	39KΩ
R258	1	1	RT0522314	22KΩ
R259	1	1	RT0582114	820Ω
R260	1	1	RT0510414	100KΩ
R261	1	1	RT0515114	150Ω
R262	1	1	RT0582214	8.2KΩ
R263	1	1	RT0515314	15KΩ
R264	1	1	RT0510214	1KΩ
R265	1	1	RT0510214	1KΩ
R266	1	1	RT0510114	100Ω
R267	1	1	RT0515114	150Ω
R268	1	1	RT0515114	150Ω
R269	1	1	RT0510414	100KΩ
R270	1	1	RT0582214	8.2KΩ
R271	1	1	RT0515314	15KΩ
R272	1	1	RT0510214	1KΩ
R273	1	1	RT0510114	100Ω
R274	1	1	RT0527214	2.7KΩ
R275	1	1	RT0582114	820Ω
R276	1	1	RT0582114	820Ω
R277	1	1	RT0582114	820Ω
R278	1	1	RT0568214	6.8KΩ
R279	1	1	RT0568214	6.8KΩ
R280	1	1	RT0510114	100Ω
R281	1	1	RT0556314	56KΩ

REF. DESIG.	U	E	PART NO.	DESCRIPTION
R282	1	1	RT0522314	22KΩ
R283	1	1	RT0510114	100Ω
R284	1	1	RT0510414	100KΩ
R285	1	1	RT0518414	180KΩ
R286	1	1	RT0510114	100Ω
R287	1	1	RT0522214	2.2KΩ
R288	1	1	RT0510114	100Ω
R289	1	1	RT0510114	100Ω
R290	1	1	RT0512114	120Ω
R291	1	1	RT0582214	8.2KΩ
R292	1	1	RT0518314	18KΩ
R293	1	1	RT0522214	2.2KΩ
R294	1	1	RT0527314	27KΩ
R296	1	1	RT0533314	33KΩ
R297	1	1	RT0522314	22KΩ
R298	1	1	RT0515314	15KΩ
				P200-CAPACITORS
C201	1	1	DK1810301	Ceramic, 0.01μF +80%,-20%
C202	1	1	DK1810301	Ceramic, 0.01μF +80%,-20%
C203	1	1	DK1840302	Ceramic, 0.04μF +80%,-20%
C204	1	1	EA1060169	Electroly, 10μF, 16V
C205	1	1	EA1060169	Electroly, 10μF, 16V
C206	1	1	DK1840302	Ceramic, 0.04μF +80%,-20%
C207	1	1	DK1810301	Ceramic, 0.01μF +80%,-20%
C208	1	1	EA1060169	Electroly, 10μF, 16V
C209	1	1	DK1840302	Ceramic, 0.04μF +80%,-20%
C210	1	1	DK1810301	Ceramic, 0.01μF +80%,-20%
C211	1	1	DD1540001	Ceramic, 40PF ±5%
C213	1	1	DK1810301	Ceramic, 0.01μF +80%,-20%
C214	1	1	DD1540001	Ceramic, 40PF ±5%
C215	1	1	DK1810301	Ceramic, 0.01μF +80%,-20%
C217	1	1	DK1840302	Ceramic, 0.04μF +80%,-20%
C218	1	1	EA1060169	Electroly, 10μF, 16V
C219	1	1	EA1060169	Electroly, 10μF, 16V
C220	1	1	DK1840302	Ceramic, 0.04μF +80%,-20%
C221	1	1	DK1810301	Ceramic, 0.01μF +80%,-20%
C222	1	1	DK1810301	Ceramic, 0.01μF +80%,-20%
C223	1	1	DD1540001	Ceramic, 40PF ±5%
C225	1	1	DK1810301	Ceramic, 0.01μF +80%,-20%
C226	1	1	DK1810301	Ceramic, 0.01μF +80%,-20%
C227	1	1	DK1810301	Ceramic, 0.01μF +80%,-20%
C228	1	1	DD1540001	Ceramic, 40PF ±5%
C229	1	1	EA1060169	Electroly, 10μF, 16V
C230	1	1	DK1840302	Ceramic, 0.04μF +80%,-20%
C232	1	1	DK1810301	Ceramic, 0.01μF +80%,-20%
C233	1	1	DD1540001	Ceramic, 40PF ±5%
C234	1	1	DK1810301	Ceramic, 0.01μF +80%,-20%
C235	1	1	DK1810301	Ceramic, 0.01μF +80%,-20%
C236	1	1	DK1810301	Ceramic, 0.01μF +80%,-20%
C237	1	1	DK1810301	Ceramic, 0.01μF +80%,-20%
C238	1	1	DK1840302	Ceramic, 0.04μF +80%,-20%
C239	1	1	DD1620101	Ceramic, 200PF ±10%
C240	1	1	DD1620101	Ceramic, 200PF ±10%
C241	1	1	DD1620101	Ceramic, 200PF ±10%
C242	1	1	EA1060169	Electroly, 10μF, 16V
C243	1	1	EA1070109	Electroly, 100μF, 10V
C244	1	1	EA1060169	Electroly, 100μF, 10V
C245	1	1	EA1060169	Electroly, 100μF, 10V
C246	1	1	DK1840302	Ceramic, 0.04μF +80%,-20%
C247	1	1	DK1840302	Ceramic, 0.04μF +80%,-20%
C148	1	1	EA1060169	Electroly, 10μF, 16V

U ..... U.S.A.
E ..... Europe

REF. DESIG.	U	E	PART NO.	DESCRIPTION
C249	1	1	EA1070169	Electroly, 100μF, 16V
C250	1	1	EA2260169	Electroly, 22μF, 16V
C251	1	1	DK1810301	Ceramic, 0.01μF +80%,-20%
C252	1	1	DD1540001	Ceramic, 40PF ±5%
C253	1	1	DK1840302	Ceramic, 0.04μF +80%,-20%
C254	1	1	DD1540001	Ceramic, 40PF ±5%
C255	1	1	DD1620101	Ceramic, 200PF ±10%
C256	1	1	EV1050352	Electroly, 1μF ±20%, 35V
C257	1	1	DD1620101	Ceramic, 200PF ±10%
C258	1	1	DK1810301	Ceramic, 0.01μF +80%,-20%
C259	1	1	DK1840302	Ceramic, 0.04μF +80%,-20%
C260	1	1	EV1050352	Electroly, 1μF, 35V
C261	1	1	EA1050509	Electroly, 1μF, 50V
C262	1	1	DK1810402	Ceramic, 0.1μF +80%,-20%
C263	1	1	DK1810402	Ceramic, 0.1μF +80%,-20%
				P200-SEMICONDUCTORS
H201	1	1	HT308291C	Transistor, 2SC829C
H202	1	1	HT308291C	Transistor, 2SC829C
H203	1	1	HT308291C	Transistor, 2SC829C
H204	1	1	HT308291C	Transistor, 2SC829C
H205	1	1	HT308291C	Transistor, 2SC829C
H206	1	1	HT308291C	Transistor, 2SC829C
H207	1	1	HT308291C	Transistor, 2SC829C
H208	1	1	HT308291C	Transistor, 2SC829C
H209	1	1	HT308291C	Transistor, 2SC829C
H210	1	1	HT306441B	Transistor, 2SC644S
H211	1	1	HD2000121	Diode, 1S2413
H212	1	1	HD2000121	Diode, 1S2413
H213	1	1	HD2000121	Diode, 1S2413
H214	1	1	HD2000121	Diode, 1S2413
H215	1	1	HD2000121	Diode, 1S2413
H216	1	1	HD2000121	Diode, 1S2413
H217	1	1	HD2000121	Diode, 1S2413
H218	1	1	HD2000121	Diode, 1S2413
H219	1	1	HD1000302	Diode, 20A90M
H220	1	1	HD1000302	Diode, 20A90M
H221	1	1	HD1000105	Diode, 1N60
H222	1	1	HD1000105	Diode, 1N60
H223	1	1	HD1000105	Diode, 1N60
H224	1	1	HD1000105	Diode, 1N60
H225	1	1	HD1000105	Diode, 1N60
H226	1	1	HD1000105	Diode, 1N60
H227	1	1	HD1000105	Diode, 1N60
H228	1	1	HD1000105	Diode, 1N60
H229	1	1	HD1000105	Diode, 1N60
H230	1	1	HD1000105	Diode, 1N60
H231	1	1	HD1000105	Diode, 1N60
H232	1	1	HD1000105	Diode, 1N60
H233	1	1	HD1000302	Diode, 20A90M
				P200-MISCELLANEOUS
F201	1	1	FP1107001	Ceramic Filter, SFA107MC
F202	1	1	FP1107001	Ceramic Filter, SFA107MC
F203	1	1	FP1107001	Ceramic Filter, SFA107MC
F204	1	1	FP1107001	Ceramic Filter, SFA107MC
F205	1	1	FP1107001	Ceramic Filter, SFA107MC
F206	1	1	FP1107001	Ceramic Filter, SFA107MC
F207	1	1	FP1107001	Ceramic Filter, SFA107MC
F208	1	1	FP1107001	Ceramic Filter, SFA107MC
L201	1	1	LI1401623	IFT, FM Detector
L202	1	1	LC1332002	Choke Coil, 3.3μH

REF. DESIG.	U	E	PART NO.	DESCRIPTION
J201	1	1	YP1000113	Plug
J202	1	1	YP1000113	Plug
J203	1	1	YP1000113	Plug
J204	1	1	YP1000113	Plug
J205	1	1	YP1000113	Plug
J206	1	1	YP1000113	Plug
J207	1	1	YP1000113	Plug
J208	1	1	YP1000113	Plug
J209	1	1	YP1000113	Plug
J210	1	1	YP1000113	Plug
J211	1	1	YP1000113	Plug
G201	1	1	BF2230006	Printed Compo. 1KΩ+0.022μF
G202	1	1	BF1020002	Printed Compo. 100KΩ+1000PF
G203	1	1	BF1020001	Printed Compo. 27KΩ+1000PF
G204	1	1	BF2010004	Printed Compo. 27KΩ+200PF
G205	1	1	BF2010004	Printed Compo. 27KΩ+200PF
G206	1	1	BF2010004	Printed Compo. 27KΩ+200PF
G207	1	1	BF2010004	Printed Compo. 27KΩ+200PF
				FM MPX CIRCUIT BOARD-P300
P300	1	1	YD2890003	P.W. Board, FM Multiplex (Print Only)
	1	1	ZZ2918103	P. W. Board Assembly
				P300-RESISTORS **All resistors are ±5% and ¼W, unless otherwise indicated.**
R301	1	1	RA0202011	Trimming, 2KΩ (B)
R302	1	1	RT0522414	220KΩ
R303	1	1	RT0556314	56KΩ
R304	1	1	RT0568314	68KΩ
R305	1	1	RT0510114	100Ω
R306	1	1	RT0518414	180KΩ
R307	1	1	RT0522414	220KΩ
R308	1	1	RT0512414	120KΩ
R309	1	1	RT0510414	100KΩ
R310	1	1	RT0568214	6.8KΩ
R311	1	1	RA0502020	Trimming, 5KΩ (B)
R312	1	1	RT0516314	16KΩ
R313	1	1	RT0510214	1KΩ
R314	1	1	RT0522414	220KΩ
R315	1	1	RT0510214	1KΩ
R316	1	1	RT0510214	1KΩ
R317	1	1	RT0539214	3.9KΩ
R318	1	1	RT0539214	3.9KΩ
R319	1	1	RT0522414	220KΩ
R320	1	1	RT0522314	22KΩ
R321	1	1	RT0510114	100Ω
R322	1	1	RT0510014	10Ω
R323	1	1	RT0522414	220KΩ
R324	1	1	RT0522414	220KΩ
R325	1	1	RT0530314	30KΩ
R326	1	1	RT0530314	30KΩ
R327	1	1	RT0510414	100KΩ
R328	1	1	RT0510414	100KΩ
R329	1	1	RT0515514	1.5MΩ
R330	1	1	RT0515514	1.5MΩ
R331	1	1	RT0551114	510Ω
R332	1	1	RT0551114	510Ω
R332	1	1	RT0551114	510Ω
R333	1	1	RT0522314	22KΩ
R334	1	1	RT0522314	22KΩ
R335	1	1	RT0510114	100Ω
R336	1	1	RT0510114	100Ω

U ..... U.S.A.
E ..... Europe

REF. DESIG.	U	E	PART NO.	DESCRIPTION
R337	1	1	RT0582214	8.2KΩ
R338	1	1	RT0582214	8.2KΩ
R339	1	1	RT0547114	470Ω
R340	1	1	RT0547114	470Ω
R341	1	1	RT0522414	220KΩ
R342	1	1	RT0522414	220KΩ
R343	1	1	RT0539214	3.9KΩ
R344	1	1	RT0556414	560KΩ
R345	1	1	RT0515314	15KΩ
R346	1	1	RT0512414	120KΩ
R347	1	1	RT0510114	100Ω
R348	1	1	RT0522414	220KΩ
R349	1	1	RT0556214	5.6K Ω
R350	1	1	RT0510314	10KΩ
R351	1	1	RT0510114	100Ω
R352	1	1	RT0533314	33KΩ
R353	1	1	RT0510114	100Ω
R354	1	1	RT0510414	100KΩ
R355	1	1	RT0527314	27KΩ
R356	1	1	RT0510414	100KΩ
R357	1	1	RT0510214	1KΩ
R358	1	1	RT0510114	100Ω
R359	1	1	RT0527314	27KΩ
R360	1	1	RT0533314	33KΩ
R361	1	1	RT0510414	100KΩ
R362	1	1	RA0104018	Trimming, 100KΩ (B)
R363	1	1	RA0103025	Trimming, 10KΩ (B)
R364	1	1	RT0522214	2.2KΩ
R365	1	1	RT0510114	100 Ω
R366	1	1	RT0510314	10K Ω
R367	1	1	RT0510114	100 Ω
R368	1	1	RT0527414	270K Ω
R369	1	1	RT0510314	10KΩ
R370	1	1	RT0512314	12KΩ
R371	1	1	RT0522114	220Ω
R373	1	1	RT0582314	82KΩ
R374	1	1	RA0103025	Trimming, 10KΩ (B)
R375	1	1	RT0510114	100Ω
R376	1	1	RT0510414	100KΩ
R377	1	1	RT0510414	100KΩ
R378	1	1	RT0556214	5.6KΩ
R379	1	1	RT0533214	3.3KΩ
				P300-CAPACITORS
C301	1	1	DF1633205	Film, 3300PF ±10%
C302	1	1	EA3360109	Electroly, 33μF, 10V
C303	1	1	DF1722305	Film, 0.022μF ±20%
C304	1	1	EA2260169	Electroly, 22μF, 16V
C305	1	1	DF5547101	Film, 470PF ±5%
C306	1	1	EA2260169	Electroly, 22μF, 16V
C307	1	1	EQ4740501	Electroly, 0.47μF ±20%, 50V
C308	1	1	EQ2240501	Electroly, 0.22μF ±20%, 50V
C309	1	1	EQ2240501	Electroly, 0.22μF ±20%, 50V
C310	1	1	DF1747301	Film, 0.047μF ±20%
C311	1	1	DF1515205	Film, 1500PF ±5%
C312	1	1	DF1515205	Film, 1500PF ±5%
C313	1	1	DD1536101	Ceramic, 360PF ±5%
C314	1	1	DD1536101	Ceramic, 360PF ±5%
C315	1	1	DF1533205	Film, 3300PF ±5%
C316	1	1	DF1533205	Film, 3300PF ±5%
C317	1	1	DF1515205	Film, 1500PF ±5%
C318	1	1	DF1515205	Film, 1500PF ±5%
C319	1	1	DF1522205	Film, 2200PF ±5%
C320	1	1	DF1522205	Film, 2200PF ±5%
C321	1	1	DF1510205	Film, 1000PF ±5%
C322	1	1	DF1510205	Film, 1000PF ±5%
C323	1	1	EV2240351	Electroly, 0.22μF ±20%, 35V
C324	1	1	EV2240351	Electroly, 0.22μF ±20%, 35V
C325	1	1	EV1050352	Electroly, 1μF ±20%, 35V
C326	1	1	EV1050352	Electroly, 1μF ±20%, 35V
C327	1	1	EA2270259	Electroly, 220μF, 25V
C328	1	1	EA2270169	Electroly, 220μF, 16V
C329	1	1	EA1060169	Electroly, 10μF, 16V
C330	1	1	DK1840302	Ceramic, 0.04μF +80%,-20%
C331	1	1	EA1050509	Electroly, 1μF, 50V
C332	1	1	EA1060169	Electroly, 10μF, 16V
C333	1	1	DD1210001	Ceramic, 10PF ±10%
C334	1	1	DF1668301	Film, 0.068μF ±10%
C335	1	1	DF1740301	Film, 0.04μF ±20%
C336	1	1	DK1810402	Ceramic, 0.1μF +80%,-20%
C337	1	1	EA4750359	Electroly, 4.7μF, 35V
C338	1	1	EA1050509	Electroly, 1μF, 50V
C339	1	1	DK1840302	Ceramic, 0.04μF +80%,-20%
C340	1	1	DK1840302	Ceramic, 0.04μF +80%,-20%
C341	1	1	DK1840302	Ceramic, 0.04μF +80%,-20%
C343	1	1	DF1710402	Film, 0.1μF ±20%
C344	1	1	DK1820302	Ceramic, 0.02μF +80%, -20%
				P300-COILS & PLUGS
L301	1	1	LS1029004	MPX Coil, 56mH
L302	1	1	LS1029004	MPX Coil, 56mH
L303	1	1	LS1029005	MPX Coil, 56mH
L304	1	1	LS1029005	MPX Coil, 56mH
L305	1	1	LC2105001	Choke Coil, 1mH
J301 ~ J322	1	1	YP1000113	Plug
				P300-SEMICONDUCTORS
H301	1	1	HF200301C	FET, 2SK 30Y
H302	1	1	HT308281D	Transistor, 2SC 828S
H303	1	1	HT308281D	Transistor, 2SC 828S
H304	1	1	HT307322A	Transistor, 2SC 732 B or G
H305	1	1	HT307322A	Transistor, 2SC 732 B or G
H306	1	1	HT104942A	Transistor, 2SA 494 G or Y
H307	1	1	HT104942A	Transistor, 2SA 494 G or Y
H308	1	1	HT308281D	Transistor, 2SC 828 S
H309	1	1	HT308281D	Transistor, 2SC 828 S
H310	1	1	HT308281D	Transistor, 2SC 828 S
H311	1	1	HT308281D	Transistor, 2SC 828 S
H312	1	1	HF200300A	FET, 2SK30Y
H313	1	1	HT308281D	Transistor, 2SC828S
H314	1	1	HT308281D	Transistor, 2SC828S
H315	1	1	HT308281D	Transistor, 2SC828S
H316	1	1	HT308281D	Transistor, 2SC828S
H317	1	1	HT308281D	Transistor, 2SC828S
H318	1	1	HD1000105	Diode, IN60
H319	1	1	HD1000105	Diode, IN60
H321	1	1	HC1000401	IC, HA1156
				PHONO AMP. CIRCUIT BOARD-P400
P400	1	1	YD2892008	P. W. Board, Phono Amp.(Print Only)
	1	1	ZZ2892008	P. W. Board Assembly

U ..... U.S.A.
E ..... Europe

REF. DESIG.	U	E	PART NO.	DESCRIPTION
				P400-RESISTORS **All resistors are ±5% and ¼W, unless otherwise indicated**
R401	1	1	RT0556314	56KΩ
R402	1	1	RT0556314	56KΩ
R403	1	1	RT0547114	470Ω
R404	1	1	RT0547114	470Ω
R405	1	1	RN0533314	33KΩ
R406	1	1	RN0510514	1MΩ
R407	1	1	RN0510514	1MΩ
R408	1	1	RA0104018	Trimming, 100KΩ ±30%(B)
R409	1	1	RA0104018	Trimming, 100KΩ ±30%(B)
R410	1	1	RN0527314	27KΩ
R411	1	1	RN0527314	27KΩ
R412	1	1	RT0562114	620Ω
R413	1	1	RT0562114	620Ω
R414	1	1	RT0522514	2.2MΩ
R415	1	1	RT0522514	2.2MΩ
R416	1	1	RN0522514	2.2MΩ
R417	1	1	RN0522514	2.2MΩ
R418	1	1	RN0527414	270KΩ
R419	1	1	RN0527414	270KΩ
R420	1	1	RT0547314	47KΩ
R421	1	1	RT0547314	47KΩ
R422	1	1	RT0522214	2.2KΩ
R423	1	1	RT0522214	2.2KΩ
R424	1	1	RN0568414	680KΩ
R425	1	1	RN0568414	680KΩ
R426	1	1	RN0510414	100KΩ
R427	1	1	RN0510414	100KΩ
R428	1	1	RN0547314	47KΩ
R429	1	1	RN0547314	47KΩ
R430	1	1	RT0547014	47Ω
R431	1	1	RT0547014	47Ω
R432	1	1	RN0533214	3.3KΩ
R433	1	1	RN0533214	3.3KΩ
R434	1	1	RT0510114	100 Ω
R435	1	1	RT0547014	47Ω
R436	1	1	RT0547014	47Ω
				P400-CAPACITORS
C401	1	1	EV1050256	Electroly, 1μF ±20%, 25V
C402	1	1	EV1050256	Electroly, 1μF ±20%, 25V
C403	1	1	EE4760163	Electroly, 47μF ±20%, 16V
C404	1	1	EE4760163	Electroly, 47μF ±20%, 16V
C405	1	1	DD1540004	Ceramic, 40PF ±5%, 50V
C406	1	1	DD1540004	Ceramic, 40PF ±5%, 50V
C407	1	1	DD1104001	Ceramic, 4PF ±0.5PF, 50V
C408	1	1	DD1104001	Ceramic, 4PF ±0.5PF, 50V
C409	1	1	DF6556201	Film, 5600PF±5%, 50V
C410	1	1	DF6556201	Film, 5600PF±5%, 50V
C411	1	1	DF6516201	Film, 1600PF±5%, 50V
C412	1	1	DF6516201	Film, 1600PF±5%, 50V
C413	1	1	ED1070351	Electroly, 100μF, 35V
C414	1	1	DF1710552	Film, 1μF ±20%, 250V
C415	1	1	DF1710552	Film, 1μF ±20%, 250V
C416	1	1	DD1650001	Ceramic, 50PF ±10%, 250V
C417	1	1	DD1650001	Ceramic, 50PF ±10%, 250V
				P400-SEMICONDUCTORS & PLUGS
H401	1	1	HT313441E	Transistor, 2SC1344E
H402	1	1	HT313441E	Transistor, 2SC1344E
H403	1	1	HT313442A	Transistor, 2SC1344D,E
H404	1	1	HT313442A	Transistor, 2SC1344D, E
H405	1	1	HT304580R	Transistor, 2SC458L, B
H406	1	1	HT304580R	Transistor, 2SC458L, B

REF. DESIG.	U	E	PART NO.	DESCRIPTION
H407	1	1	HD2000121	Diode, IS-2473CYe
H408	1	1	HD2000121	Diode, IS-2473CYe
H409	1	1	HV0000206	Varistor, VD1212
J401	1	1	YP1000113	Plug
J402	1	1	YP1000113	Plug
J403	1	1	YP1000113	Plug
J404	1	1	YP1000113	Plug
J405	1	1	YP1000113	Plug
J406	1	1	YP1000113	Plug
J407	1	1	YP1000113	Plug
J408	1	1	YP1000113	Plug
				DOLBY CIRCUIT BOARD-P600
P600	1	1	YD2886008	P. W. Board, Dolby (Print Only)
	1	1	ZZ2918108	P. W. Board Assembly
				P600-RESISTORS **All resistors are ±5% and W¼, unless otherwise indicated.**
R601	1	1	RT0547414	470KΩ
R602	1	1	RT0547414	470KΩ
R603	1	1	RT0510414	100KΩ
R604	1	1	RT0510414	100KΩ
R605	1	1	RT0533214	3.3KΩ
R606	1	1	RT0533214	3.3KΩ
R607	1	1	RT0510214	1KΩ
R608	1	1	RT0510214	1KΩ
R609	1	1	RT0539314	39KΩ
R610	1	1	RT0539314	39KΩ
R611	1	1	RT0568214	6.8KΩ
R612	1	1	RT0568214	6.8KΩ
R613	1	1	RT0510114	100Ω
R614	1	1	RT0510114	100Ω
R615	1	1	RT0522214	2.2KΩ
R616	1	1	RT0522214	2.2KΩ
R617	1	1	RT0512114	120Ω
R618	1	1	RT0512114	120Ω
R619	1	1	RT0556114	560Ω
R620	1	1	RT0556114	250Ω
R621	1	1	RT0533314	33KΩ
R622	1	1	RT0533314	33KΩ
R623	1	1	RT0215414	150KΩ ±2%, ¼W
R624	1	1	RT0215414	150KΩ ±2%, ¼W
R625	1	1	RT0218414	180KΩ ±2%, ¼W
R626	1	1	RT0218414	180KΩ ±2%, ¼W
R627	1	1	RT0527314	27KΩ
R628	1	1	RT0527314	27KΩ
R629	1	1	RT0582214	8.2KΩ
R630	1	1	RT0582214	8.2KΩ
R631	1	1	RT0215414	150KΩ ±2%, ¼W
R632	1	1	RT0215414	150KΩ ±2%, ¼W
R633	1	1	RT0522314	22KΩ
R634	1	1	RT0522314	22KΩ
R635	1	1	RT0227214	2.7KΩ ±2%, ¼W
R636	1	1	RT0227214	2.7KΩ ±2%, ¼W
R637	1	1	RT0533314	33KΩ
R638	1	1	RT0533314	33KΩ
R639	1	1	RT0547314	47KΩ
R640	1	1	RT0547314	47KΩ
R643	1	1	RT0527414	270KΩ
R644	1	1	RT0527414	270KΩ

U ..... U.S.A.
E ..... Europe

REF. DESIG.	U	E	PART NO.	DESCRIPTION
R645	1	1	RT0547314	47KΩ
R646	1	1	RT0547314	47KΩ
R647	1	1	RT0533214	3.3KΩ
R648	1	1	RT0533214	3.3KΩ
R649	1	1	RT0515214	1.5KΩ
R650	1	1	RT0515214	1.5KΩ
R651	1	1	RT0518314	18KΩ
R652	1	1	RT0518314	18KΩ
R653	1	1	RA0103022	Variable, 10KΩ (B)
R654	1	1	RA0103022	Variable, 10KΩ (B)
R655	1	1	RT0527214	2.7KΩ
R656	1	1	RT0527214	2.7KΩ
R657	1	1	RT0568414	680KΩ
R658	1	1	RT0568414	680KΩ
R659	1	1	RA0102020	Variable, 1KΩ (B)
R660	1	1	RA0102020	Variable, 1KΩ (B)
R661	1	1	RT0515314	15KΩ
R662	1	1	RT0515314	15KΩ
R663	1	1	RT0582214	8.2KΩ
R664	1	1	RT0582214	8.2KΩ
R665	1	1	RT0510314	10KΩ
R666	1	1	RT0510314	10KΩ
R667	1	1	RT0582214	8.2KΩ
R668	1	1	RT0582214	8.2KΩ
R669	1	1	RT0582214	8.2KΩ
R670	1	1	RT0582214	8.2KΩ
R671	1	1	RT0533314	33KΩ
R672	1	1	RT0533314	33KΩ
R673	1	1	RT0512414	120KΩ
R674	1	1	RT0512414	120KΩ
R675	1	1	RT0547314	47KΩ
R676	1	1	RT0547314	47KΩ
R677	1	1	RT0527214	2.7KΩ
R678	1	1	RT0527214	2.7KΩ
R679	1	1	RT0510214	1KΩ
R680	1	1	RT0510214	1KΩ
R681	1	1	RT0533014	33Ω
R682	1	1	RT0533014	33Ω
R683	1	1	RT0547014	47Ω
R684	1	1	RT0547014	47Ω
R685	1	1	RT0515314	15KΩ
R686	1	1	RT0515314	15KΩ
R687	1	1	RT0527414	270KΩ
R688	1	1	RT0527414	270KΩ
R689	1	1	RT0527414	270KΩ
R690	1	1	RT0527414	270KΩ
R691	1	1	RT0522414	220KΩ
R692	1	1	RT0522414	220KΩ
R693	1	1	RC1010112	100Ω ±10%, ½W
				P600-CAPACITORS
C601	1	1	EE3350251	Electroly, 3.3μF, 25V
C602	1	1	EE3350251	Electroly, 3.3μF, 25V
C603	1	1	DF6610101	Film, 100PF ±10%
C604	1	1	DF6610101	Film, 100PF ±10%
C605	1	1	DF1510205	Film, 1000PF ±5%
C606	1	1	DF1510205	Film, 1000PF ±5%
C607	1	1	EA1060169	Electroly, 10μF, 16V
C608	1	1	EA1060169	Electroly, 10μF, 16V
C609	1	1	EA1060169	Electroly, 10μF, 16V
C610	1	1	EA1060169	Electroly, 10μF, 16V
C611	1	1	EA1060169	Electroly, 10μF, 16V
C612	1	1	EA1060169	Electroly, 10μF, 16V

REF. DESIG.	U	E	PART NO.	DESCRIPTION
C613	1	1	EA1060169	Electroly, 10μF, 16V
C614	1	1	EA1060169	Electroly, 10μF, 16V
C617	1	1	DF1556205	Film, 5600PF ±5%
C618	1	1	DF1556205	Film, 5600PF ±5%
C619	1	1	DF1527305	Film, 0.027μF ±5%
C620	1	1	DF1527305	Film, 0.027μF ±5%
C621	1	1	DF1547205	Film, 4700PF ±5%
C622	1	1	DF1547205	Film, 4700PF ±5%
C623	1	1	EA1060169	Electroly, 10μF, 16V
C624	1	1	EA1060169	Electroly, 10μF, 16V
C625	1	1	DF1610405	Film, 0.1μF ±10%
C626	1	1	DF1610405	Film, 0.1μF ±10%
C627	1	1	EA4760109	Electroly, 47μF, 10V
C628	1	1	EA4760109	Electroly, 47μF, 10V
C629	1	1	DF1610405	Film, 0.1μF ±10%
C630	1	1	DF1610405	Film, 0.1μF ±10%
C631	1	1	EA1060169	Electroly, 10μF, 16V
C632	1	1	EA1060169	Electroly, 10μF, 16V
C633	1	1	DF1610405	Film, 0.1μF ±10%
C634	1	1	DF1610405	Film, 0.1μF ±10%
C635	1	1	EA1060169	Electroly, 10μF, 16V
C636	1	1	EA1060169	Electroly, 10μF, 16V
C637	1	1	DF1610405	Film, 0.1μF ±10%
C638	1	1	DF1610405	Film, 0.1μF ±10%
C639	1	1	DF1633405	Film, 0.33μF ±10%
C640	1	1	DF1633405	Film, 0.33μF ±10%
C641	1	1	EA2270259	Electroly, 220μF, 25V
				P600-COILS & PLUGS
L601	1	1	LC2226004	Choke Coil, 22mH
L602	1	1	LC2226004	Choke Coil, 22mH
J601 ≀ J608	1	1	YP1000109	Plug
J611	1	1	YP1000109	Plug
J612	1	1	YP1000109	Plug
J615 ≀ J621	1	1	YP1000109	Plug
				P600-SEMICONDUCTORS
H601	1	1	HT313271T	Transistor, 2SC1327 T,U
H602	1	1	HT313271T	Transistor, 2SC1327 T,U
H603	1	1	HT306441B	Transistor, 2SC644S
H604	1	1	HT306441B	Transistor, 2SC644S
H605	1	1	HT104941C	Transistor, 2SA494Y
H606	1	1	HT104941C	Transistor, 2SA494Y
H607	1	1	HT306441B	Transistor, 2SC644S
H608	1	1	HT306441B	Transistor, 2SC644S
H609	1	1	HT306441B	Transistor, 2SC644S
H610	1	1	HT306441B	Transistor, 2SC644S
H611	1	1	HF200301E	Transistor, 2SK30D
H612	1	1	HF200301E	Transistor, 2SK30D
H613	1	1	HT306441B	Transistor, 2SC644S
H614	1	1	HT306441B	Transistor, 2SC644S
H615	1	1	HT104941C	Transistor, 2SA494Y
H616	1	1	HT104941C	Transistor, 2SA494Y
H617	1	1	HT306441B	Transistor, 2SC644S
H618	1	1	HT306441B	Transistor, 2SC644S
H621	1	1	HD1000105	Diode, IN60
H622	1	1	HD1000105	Diode, IN60
H623	1	1	HD2000121	Diode, IS2473
H624	1	1	HD2000121	Diode, IS2473
H625	1	1	HD3003109	Diode, WZ-081

U ..... U.S.A.
E ..... Europe

REF. DESIG.	U	E	PART NO.	DESCRIPTION
H626	1	1	HD2000121	IS2473
H627	1	1	HD2000121	IS2473
H628	1	1	HD2000121	IS2473
H629	1	1	HD2000121	IS2473
				P600-MISCELLANEOUS
2023	1	1	288616003	Bracket
2024	2	2	288616004	Bracket
2025	4	4	515703058	P. H. Tapt Screw P 3 x 5ST
2026	2	2	54050300R	T. L. Washer OR
2027	4	4	51100304S	B. H. M. Screw B 3 x 4
				GENERAL MISCELLANEOUS
1909	8	8	51100306S	B. H. M. Screw B 3x6
1910	2	2	51102605S	B. H. M. Screw B 2.6x5
1912	2	2	291810402	Retainer
1913	2	2	291812003	Insulator
1914	4	4	51102605S	B. H. M. Screw B 2.6x5
H001	1	1	HT107470A	Transistor, 2SA747A R or O
H002	1	1	HT107470A	Transistor, 2SA747A R or O
H003	1	1	HT311160A	Transistor, 2SC116A R or O
H004	1	1	HT311160A	Transistor, 2SC116A R or O
H005	1	1	HT107470A	Transistor, 2SA747A R or O
H006	1	1	HT107470A	Transistor, 2SA747A R or O
H007	1	1	HT311160A	Transistor, 2SC116A R or O
H008	1	1	HT311160A	Transistor, 2SC116A R or O
J020	1	1	YJ0500019	Socket, Transistor
J021	1	1	YJ0500019	Socket, Transistor
J022	1	1	YJ0500019	Socket, Transistor
J023	1	1	YJ0500019	Socket, Transistor
J024	1	1	YJ0500019	Socket, Transistor
J025	1	1	YJ0500019	Socket, Transistor
J026	1	1	YJ0500019	Socket, Transistor
J027	1	1	YJ0500019	Socket, Transistor
1903	2	2	291826701	Heat Sink
1904	16	16	54040302N	Spring Washer
1905	16	16	51100316B	B. H. M. Screw B 3 x 16
1906	4	4	291816003	Bracket
1907	8	8	51380306T	P. H. Tap Screw P 3 x 6 ST
1917	4	4	291810401	Retainer
1918	8	8	51380306T	P. H. Tap Screw P 3 x 6 ST
				POWER AMP. CIRCUIT BOARD-P700
P700	2	2	YD2918001	P. W. Board, Power Amp.(Print Only)
	2	2	ZZ2918001	P. W. Board Assembly
				P700-RESISTORS **All resistors are ±5% and ¼W, unless otherwise indicated.**
R701	2	2	RT0547414	470KΩ
R702	2	2	RT0510214	1KΩ
R703	2	2	RT0510414	100KΩ
R704	2	2	RT0510314	10KΩ
R705	2	2	RT0591314	91KΩ
R706	2	2	RT0547114	470Ω
R707	2	2	RT0515114	150Ω
R708	2	2	RT0575214	7.5KΩ
R709	2	2	RT0233214	3.3KΩ ±2%, ¼W
R710	2	2	RT0522414	220KΩ
R711	2	2	GM0282212	8.2KΩ ±2%, ½W
R712	2	2	GU0510312	10KΩ ±5%, ½W
R713	2	2	RA0102023	Trimming, 1KΩ (B)

REF. DESIG.	U	E	PART NO.	DESCRIPTION
R714	2	2	RT0520214	2KΩ
R715	2	2	RT0582214	8.2KΩ
R716	2	2	RT0568114	680Ω
R717	2	2	RT0522114	220Ω
R718	2	2	RT0527014	27Ω
R719	2	2	GJ0512202	1.2KΩ ±5%, 2W
R720	2	2	GJ0512202	1.2KΩ ±5%, 2W
R721	2	2	RT0527114	270Ω
R722	2	2	RT0527314	27KΩ
R723	2	2	RT0527314	27KΩ
R724	2	2	GD0556114	560Ω
R725	2	2	GD0556114	560Ω
R726	2	2	RT0510114	100Ω
R727	2	2	RT0510114	100Ω
R728	2	2	RT0547314	47KΩ
R729	2	2	RT0210414	100KΩ ±2%, ¼W
R730	2	2	RC0000012	0Ω, ½W
R731	2	2	RC0000012	0Ω, ½W
R732	2	2	GF0562014	62Ω
R733	2	2	GF0562014	62Ω
R734	2	2	HH0000703	SDT-100 1KΩ/25°C
R735	2	2	HH0000703	SDT-100 1KΩ/25°C
R736	2	2	GF0547214	4.7KΩ
R737	2	2	GF0547214	4.7KΩ
R738	2	2	GD0524214	2.4KΩ
R739	2	2	RT0504714	4.7Ω
R740	2	2	RA0102023	Trimming, 1KΩ (B)
R741	2	2	GJ0547001	47Ω ±5%, 1W
R742	2	2	GJ0547001	47Ω ±5%, 1W
R743	2	2	GJ0501501	1.5Ω ±5%, 1W
R744	2	2	GJ0501501	1.5Ω ±5%, 1W
R745	2	2	RT0504714	4.7Ω
R746	2	2	GJ0522003	22Ω ±5%, 3W
R747	2	2	GJ0502202	2.2Ω ±5%, 2W
R748	2	2	BX1010201	(0.1Ω+0.1Ω)±10%, 5W
R749	2	2	BX1020201	(0.2Ω+0.2Ω)±10%, 5W
R750	2	2	BX1020201	(0.2Ω+0.2Ω)±10%, 5W
R753	2	2	RC0000012	0Ω, ½W
R754	2	2	RC0000012	0Ω, ½W
				P700-CAPACITORS & COIL
C701	2	2	DF1710552	Film, 1μF ±20% 250V
C702	2	2	DD1510101	Ceramic, 100PF ±5%, 50V
C703	2	2	EV3360066	Electroly, 33μF ±20%, 6.3V
C704	2	2	DK1610251	Ceramic, 1000PF ±10%, 500V
C705	2	2	DK1610251	Ceramic, 1000PF ±10%, 500V
C706	2	2	EA1060259	Electroly, 10μF+50%,-10%, 25V
C707	2	2	EA1060259	Electroly, 10μF+50%,-10%, 25V
C708	2	2	DF1710453	Film, 0.1μF ±20%, 250V
C709	2	2	DF1710453	Film, 0.1μF ±20%, 250V
C710	2	2	DK1610150	Ceramic, 100PF ±10%, 500V
C711	2	2	DD1008050	Ceramic, 8PF ±0.25PF, 500V
C712	2	2	DK1610150	Ceramic, 100PF ±10%, 500V
C713	2	2	DK1610150	Ceramic, 100PF ±10%, 500V
C714	2	2	DF1710453	Film, 0.1μF ±20%, 250V
C715	2	2	DF1747301	Film, 0.047μF ±20%, 50V
C716	2	2	DF1747301	Film, 0.047μF ±20%, 50V
C718	2	2	DK1610251	Ceramic, 1000PF ±10%, 500V
C719	2	2	DF1733350	Film, 0.033μF ±20%, 250V
C721	2	2	DF1710453	Film, 0.1μF ±20%, 250V
C722	2	2	DF1710351	Film, 0.01μF ±20%, 200V
L701	2	2	LC2222001	Choke Coil, 2.2μH ±10%

U ..... U.S.A.
E ..... Europe

REF. DESIG.	U	E	PART NO.	DESCRIPTION
				P700-SEMICONDUCTORS, JACK & PLUGS
H701	1	1	HT107221S	Transistor, 2SA722 S, T
H702	1	1	HT107221S	Transistor, 2SA722 S, T
H703	2	2	HT107223A	Transistor, 2SA722 S,T,U
H704	2	2	HT107202A	Transistor, 2SA720 R,S
H705	2	2	HT313182R	Transistor, 2SC1318 R,S
H706	1	1	HT108181D	Transistor, 2SA818
H707	1	1	HT316281D	Transistor, 2SC1628
H708	1	1	HT316691B	Transistor, 2SC1669
H709	1	1	HT108391B	Transistor, 2SA839
H710	2	2	HT309452A	Transistor, 2SC945 Q, R
H711	2	2	HT107332A	Transistor, 2SA733 P, Q
H712	2	2	HT107332A	Transistor, 2SA733 P, Q
H713	2	2	HT309452A	Transistor, 2SC945 Q, R
H714	2	2	HT304961B	Transistor, 2SC496 O
H715	2	2	HT304961B	Transistor, 2SC496 O
H716	2	2	HD3004409	Diode, CZ-205
H717	2	2	HD3004409	Diode, CZ-205
H718	2	2	HV0000506	Varistor, VD1122
H719	2	2	HV0000506	Varistor, VD1122
H720	2	2	HD2000321	Diode, IS2471 (Black)
H721	2	2	HD2000321	Diode IS2471 (Black)
J701	2	2	YJ0600029	Jack
J702	2	2	YP1000099	Plug
J703	2	2	YP1000099	Plug
J704	2	2	YP1000099	Plug
J705	2	2	YP1000099	Plug
J706	2	2	YP1000099	Plug
J707	2	2	YP1000099	Plug
J708	2	2	YP1000099	Plug
J709	2	2	YP1000099	Plug
J710	2	2	YP0600045	Plug
				GENERAL MISCELLANEOUS
1803	4	4	291826703	Heat Sink
1805	8	8	51100310E	B. H. M. Screw B 3 x 10
1806	8	8	54040302N	Spring Washer
1807	8	8	53110302E	Hexagon Nut
1812	8	8	53110303E	Hexagon Nut
1813	8	8	54050300R	T. L. Washer OR
1818	2	2	291826706	Heat Sink
1819	4	4	291811801	Spacer
1820	4	4	51100310E	B. H. M. Screw B 3 x 10
1821	4	4	53110303E	Hexagon Nut
1823	4	4	53110303E	Hexagon Nut
1824	4	4	54050300R	T. L. Washer OR
1828	2	2	291826705	Heat Sink
1830	2	2	51102610E	B. H. M. Screw B 2.6 x 10
1831	2	2	53112603E	Hexagon Nut
1832	2	2	54042602N	Spring Washer
1703	1	1	291826702	Heat Sink
1705	2	2	51100306S	B. H. M. Screw B 3 x 6
1707	2	2	51100310E	B. H. M. Screw B 3 x 10
1708	2	2	53110303E	Hexagon Nut
1709	2	2	54050300R	T. L. Washer OR
				POWER SUPPLY CIRCUIT BOARD-P800
P800	1	1	YD2918004	P. W. Board, Power Supply (Print Only)
	1	1	ZZ2918004	P. W. Board Assembly

REF. DESIG.	U	E	PART NO.	DESCRIPTION
				P800-RESISTORS
R801	1	1	GQ1015105	150Ω ±10%, 5W
R802	1	1	GF0533214	3.3KΩ ±5%, ¼W
R803	1	1	GF0510014	10Ω ±5%, ¼W
R804	1	1	GF0510012	10Ω ±5%, ½W
R805	1	1	RT0547214	4.7KΩ ±5%, ¼W
R806	1	1	RT0547214	4.7KΩ ±5%, ¼W
R807	1	1	GF0539214	3.9KΩ ±5%, ¼W
R808	1	1	RT0522314	22KΩ ±5%, ¼W
R809	1	1	RA0502020	Trimming, 5K Ω (B)
R810	1	1	RT0556214	5.6KΩ ±5%, ¼W
R811	1	1	GJ0527102	270Ω ±5%, 2W
R812	1	1	RT0547214	4.7KΩ ±5%, ¼W
R813	1	1	RT0527314	27KΩ ±5%, ¼W
R814	1	1	RT0539314	39KΩ ±5%, ¼W
R815	1	1	RT0539314	39KΩ ±5%, ¼W
R816	1	1	RT0539414	390KΩ±5%, ¼W
R817	1	1	GJ0547101	470Ω ±5%, 1W
R818	1	1	RC0000012	0Ω, ½W
R819	1	1	GU0556212	5.6KΩ ±5%, ½W
R820	1	1	GU0556212	5.6KΩ ±5%, ½W
				P800-CAPACITORS
C801	1	1	DK1810351	Ceramic, 0.01µF+100%,-0%, 500V
C802	1	1	DK1810351	Ceramic, 0.01µF+100%,-0%, 500V
C803	1	1	EA4770631	Electroly, 470µF, 63V
C804	1	1	EA2270631	Electroly, 220µF, 63V
C805	1	1	EA4770169	Electroly, 470µF, 16V
C806	1	1	EA2270631	Electroly, 220µF, 63V
C807	1	1	EA3370509	Electroly, 330µF, 50V
C808	1	1	DF1747305	Film, 0.047µF, 50V
C809	1	1	EA1060509	Electroly, 10µF, 50V
C810	1	1	DF1710305	Film, 0.01µF, 50V
C811	1	1	EA1060639	Electroly, 10µF, 63V
C812	1	1	EA4760169	Electroly, 47µF, 16V
C813	1	1	EA2270109	Electroly, 220µF, 10V
				P800-SEMICONDUCTORS
H801	1	1	HT403314A	Transistor, 2SD331 C.D.E.F
H802	1	1	HT403314A	Transistor, 2SD331 C.D.E.F.
H803	1	1	HT307343A	Transistor, 2SC734 R.O.Y
H804	1	1	HT309452A	Transistor, 2SC945 Q.R
H805	1	1	HT309452A	Transistor, 2SC945 Q.R
H806	1	1	HT313183A	Transistor, 2SC1318 P.Q.R
H807	1	1	HT313183A	Transistor, 2SC1318 P.Q.R
H808	1	1	HD2001103	Rectifier DS-131B
H809	1	1	HD2001103	Rectifier, DS-131B
H810	1	1	HD3002709	Diode, WZ-140
H811	1	1	HD3002309	Diode, WZ-071
H812	1	1	HD2000321	Diode, 1S2471 (Black)
				P800-MISCELLANEOUS
L801	1	1	LY2024007	Relay, 24V, 10A
F801	1	1	FS1002006	Fuse, 0.2A
J801 ~ J811	1	1	YP1000113	Plug
J812	1	1	YJ0800021	Socket
J813	1	1	YJ0800021	Socket
				PRE-TONE AMP. CIRCUIT BOARD PE01
PE01	1	1	YD2918002	P.W.Board, Pre-Tone Amp. (Print Only)
	1	1	ZZ2918002	P.W.Board Assembly

U ..... U.S.A.
E ..... Europe

REF. DESIG.	U	E	PART NO.	DESCRIPTION
				PE01-RESISTORS **All resistors are ±5% and ¼W, unless otherwise indicated.**
RE01	1	1	RM0503061	Variable, 50KΩ (B)
RE02	1	1	RD0204001	Variable, 200KΩ (B)
RE03	1	1	RD0204001	Variable, 200KΩ (B)
RE04	1	1	RD0204001	Variable, 200KΩ (B)
RE05	1	1	RT0522314	22KΩ
RE06	1	1	RT0522314	22KΩ
RE07	1	1	RT0539214	3.9KΩ
RE08	1	1	RT0539214	3.9KΩ
RE09	1	1	RT0539114	390Ω
RE10	1	1	RT0539114	390Ω
RE11	1	1	RN0515414	150KΩ
RE12	1	1	RN0515414	150KΩ
RE13	1	1	RN0547414	470KΩ
RE14	1	1	RN0547414	470KΩ
RE15	1	1	RT0291114	910Ω ±2%, ¼W
RE16	1	1	RT0291114	910Ω ±2%, ¼W
RE17	1	1	RT0251214	5.1KΩ ±2%, ¼W
RE18	1	1	RT0251214	5.1KΩ ±2%, ¼W
RE19	1	1	RT0522414	220KΩ
RE20	1	1	RT0522414	220KΩ
RE21	1	1	RC0000012	0Ω, ½W
RE22	1	1	RC0000012	0Ω, ½W
RE23	1	1	RT0527314	27KΩ
RE24	1	1	RT0527314	27KΩ
RE25	1	1	RT0527314	27KΩ
RE26	1	1	RT0527314	27KΩ
RE29	1	1	RT0527314	27KΩ
RE30	1	1	RT0527314	27KΩ
RE31	1	1	RT0520314	20KΩ
RE32	1	1	RT0520314	20KΩ
RE33	1	1	RT0510314	10KΩ
RE34	1	1	RT0510314	10KΩ
RE35	1	1	RT0510314	10KΩ
RE36	1	1	RT0510314	10KΩ
RE37	1	1	RT0510314	10KΩ
RE38	1	1	RT0510314	10KΩ
RE39	1	1	RT0510314	10KΩ
RE40	1	1	RT0510314	10KΩ
RE41	1	1	RT0568414	680KΩ
RE42	1	1	RT0568414	680KΩ
RE43	1	1	RC0000012	0Ω, ½W
RE44	1	1	RC0000012	0Ω, ½W
RE45	1	1	RT0522514	2.2MΩ
RE46	1	1	RT0522514	2.2MΩ
RE47	1	1	RT0522514	2.2MΩ
RE48	1	1	RT0522514	2.2MΩ
RE49	1	1	RT0522514	2.2MΩ
RE50	1	1	RT0522514	2.2MΩ
RE51	1	1	RT0210314	10KΩ ±2%, ¼W
RE52	1	1	RT0210314	10KΩ ±2%, ¼W
RE53	1	1	RT0210314	10KΩ ±2%, ¼W
RE54	1	1	RT0210314	10KΩ ±2%, ¼W
RE55	1	1	RT0210314	10KΩ ±2%, ¼W
RE56	1	1	RT0210314	10KΩ ±2%, ¼W
RE57	1	1	RC0000012	0Ω, ½W
RE58	1	1	RC0000012	0Ω, ½W
RE59	1	1	RC0000012	0Ω, ½W
RE60	1	1	RC0000012	0Ω, ½W
RE61	1	1	RT0527214	2.7KΩ

REF. DESIG.	U	E	PART NO.	DESCRIPTION
RE62	1	1	RT0510414	100KΩ
RE63	1	1	RT0547414	470KΩ
RE64	1	1	RT0547414	470KΩ
RE65	1	1	RT0547314	47KΩ
RE66	1	1	RT0547314	47KΩ
RE67	1	1	RT0522114	220Ω
RE68	1	1	RT0522114	220Ω
RE69	1	1	RT0510314	10KΩ
RE70	1	1	RT0510314	10KΩ
RE71	1	1	RT0522414	220KΩ
RE72	1	1	RT0522414	220KΩ
RE73	1	1	RT0510114	100Ω
RE74	1	1	RC0000012	0Ω, ½W
				PE01-CAPACITORS
CE01	1	1	DK1668101	Ceramic; 680μF ± 10%, 50V
CE02	1	1	DK1668101	Ceramic, 680μF ± 10%, 50V
CE03	1	1	DF1610405	Film, 0.1PF ± 10%, 50V
CE04	1	1	DF1610405	Film, 0.1PF ± 10%, 50V
CE05	1	1	DF1710552	Film, 1μF ± 20%, 250V
CE06	1	1	DF1710552	Film, 1μF ± 20%, 250V
CE07	1	1	DD1530001	Ceramic, 30PF ± 5%, 50V
CE08	1	1	DD1530001	Ceramic, 30PF ± 5%, 50V
CE09	1	1	EA1070109	Electroly, 100μF + 50%, -10%, 10V
CE10	1	1	EA1070109	Electroly, 100μF + 50%, -10%, 10V
CE11	1	1	EA1060359	Electroly, 10μF +50%, -10%, 35V
CE12	1	1	EA1060359	Electroly, 10μF +50%, -10%, 35V
CE13	1	1	EV3350356	Electroly, 3.3μF ± 20%, 35V
CE14	1	1	EV3350356	Electroly, 3.3μF ± 20%, 35V
CE15	1	1	DF1510305	Film, 0.01μF ± 5%, 50V
CE16	1	1	DF1510305	Film, 0.01μF ± 5%, 50V
CE17	1	1	DF1510305	Film, 0.01μF ± 5%, 50V
CE18	1	1	DF1510305	Film, 0.01μF ± 5%, 50V
CE19	1	1	DF1510305	Film, 0.01μF ± 5%, 50V
CE20	1	1	DF1510305	Film, 0.01μF ± 5%, 50V
CE21	1	1	DF1510305	Film, 0.01μF ± 5%, 50V
CE22	1	1	DF1510305	Film, 0.01μF ± 5%, 50V
CE23	1	1	DF1668205	Film, 0.068μF ± 5%, 50V
CE24	1	1	DF1668205	Film, 0.068μF ± 5%, 50V
CE25	1	1	DK1668101	Ceramic, 680PF ± 10%, 50V
CE26	1	1	DK1668101	Ceramic, 680PF ± 10%, 50V
CE27	1	1	DK1668101	Ceramic, 680PF ± 10%, 50V
CE28	1	1	DK1668101	Ceramic, 680PF ± 10%, 50V
CE29	1	1	DE1633205	Film, 0.0033μF ± 10%, 50V
CE30	1	1	DF1633205	Film 0.0033μF ± 10%, 50V
CE31	1	1	DD1650001	Ceramic, 50PF ± 10%, 50V
CE32	1	1	DD1650001	Ceramic, 50PF ± 10%, 50V
CE33	1	1	EV1050256	Electroly, 1μF ± 20%, 25V
CE34	1	1	EV1050256	Electroly, 1μF ± 20%, 25V
CE35	1	1	EV3350356	Electroly, 3.3μF ± 20%, 25V
CE36	1	1	EV3350356	Electroly, 3.3μF ± 20%, 25V
CE37	1	1	EQ4750161	Electroly, 4.7μF ± 30%, 16V
CE38	1	1	EQ4750161	Electroly, 4.7μF ± 30%, 16V
CE39	1	1	EA2270359	Electroly, 220μF+50%, -10%, 35V
				PE01-MISCELLANEOUS
HE01	1	1	HC1000121	IC, BA312
HE02	1	1	HC1000121	IC, BA312
HE03	1	1	HT313272A	Transistor, 2SC1327 S. T
HE04	1	1	HT107212A	Transistor 2SA721 S. T
HE05	1	1	HT313272A	Transistor 2SC1327 S. T
HE06	1	1	HT107212A	Transistor 2SA721 S. T

U ..... U.S.A.
E ..... Europe

REF. DESIG.	U	E	PART NO.	DESCRIPTION
JE01	1	1	YP0600026	Plug, 14P
SE01	1	1	SR1005007	Rotaly Switch, Tone Mode
				BUFFER AMP. CIRCUIT BOARD-PH01
PH01	1	1	YD2918003	P. W. Board, Buffer Amp. (Print Only)
	1	1	ZZ2918003	P. W. Board Assembly
				PH01-RESISTORS
				All resistors are ±5% and ¼W.
RH01	1	1	RT0562214	6.2KΩ
RH02	1	1	RT0568214	6.8KΩ
RH03	1	1	RT0512414	120KΩ
RH04	1	1	RT0512414	120KΩ
RH05	1	1	RT0512414	120KΩ
RH06	1	1	RT0512414	120KΩ
RH07	1	1	RN0518514	1.8MΩ
RH08	1	1	RN0518514	1.8MΩ
RH09	1	1	RN0518514	1.8MΩ
RH10	1	1	RN0518514	1.8MΩ
RH11	1	1	RN0515314	15KΩ
RH12	1	1	RN0515314	15KΩ
RH13	1	1	RN0515314	15KΩ
RH14	1	1	RN0515314	15KΩ
RH15	1	1	RT0575014	75Ω
RH16	1	1	RT0575014	75Ω
RH17	1	1	RT0547214	4.7KΩ
RH18	1	1	RT0547214	4.7KΩ
RH19	1	1	RT0536314	36KΩ
RH20	1	1	RT0522414	220KΩ
RH21	1	1	RT0522414	220KΩ
RH22	1	1	RT0522414	220KΩ
RH23	1	1	RT0522414	220KΩ
RH24	1	1	RT0575014	75Ω
RH25	1	1	RT0575014	75Ω
RH26	1	1	RT0575014	75Ω
RH27	1	1	RT0575014	75Ω
RH28	1	1	RT0510114	100Ω
				PF01-CAPACITORS
CH01	1	1	DF1722405	Film, 0.22μF ± 20%, 50V
CH02	1	1	DF1722405	Film, 0.22μF ± 20%, 50V
CH03	1	1	DF1722405	Film, 0.22μF ± 20%, 50V
CH04	1	1	DF1722405	Film, 0.22μF ± 20%, 50V
CH05	1	1	EV4750356	Electroly, 4.7μF ± 20%, 35V
CH06	1	1	EV4750356	Electroly, 4.7μF ± 20%, 35V
CH07	1	1	EV4750356	Electroly, 4.7μF ± 20%, 35V
CH08	1	1	EV4750356	Electroly, 4.7μF ± 20%, 35V
CH09	1	1	DK1750201	Ceramic, 5000PF ± 20%, 50V
CH10	1	1	DK1750201	Ceramic, 5000PF ± 20%, 50V
CH11	1	1	DK1750201	Ceramic, 5000PF ± 20%, 50V
CH12	1	1	DK1750201	Ceramic, 5000PF ± 20%, 50V
CH13	1	1	EA2270359	Electroly, 220μF, 35V
				PE01-SEMICONDUCTORS & PLUGS
HH01	1	1	HT313452A	Transistor, 2SC1345 D, E
HH02	1	1	HT313452A	Transistor, 2SC1345 D, E
HH03	1	1	HT313452A	Transistor, 2SC1345 D, E
HH04	1	1	HT313452A	Transistor, 2SC1345 D, E
HH05	1	1	HT107202A	Transistor, 2SC720 R. S
HH06	1	1	HT107202A	Transistor, 2SC720 R, S
HH07	1	1	HT107202A	Transistor, 2SC720 R, S
HH08	1	1	HT107202A	Transistor, 2SC720 R, S

REF. DESIG.	U	E	PART NO.	DESCRIPTION
HH09	1	1	HT313182Q	Transistor, 2SC1318 Q, R
HH10	1	1	HT313182Q	Transistor, 2SC1318 Q, R
HH11	1	1	HV0000606	Varistor, VD1222
JH01 ~ JH10	1	1	YP1000113	Plug
				DOLBY,TONE & METER CIRCUIT BOARD – PL01
PL01	1	1	YD2886009	P. W. Board, Dolby, Tone & Meter (Print Only)
	1	1	ZZ2918109	P. W. Board Assembly
				PL01-RESISTORS
				All resistors are ±5% and ¼W, unless otherwise indicated.
RL01	1	1	RT0533214	3.3KΩ
RL02	1	1	RT0547314	47KΩ
RL03	1	1	RT0510114	100Ω
RL04	1	1	RT0533214	3.3KΩ
RL05	1	1	RT0510214	1KΩ
RL06	1	1	RT0512314	12KΩ
RL07	1	1	RT0547314	47KΩ
RL08	1	1	RC1010212	1KΩ ± 10%, ½W
RL09	1	1	RT0547214	4.7KΩ
RL10	1	1	RT0510214	1KΩ
RL11	1	1	RA0501012	Trimming, 500Ω (B)
RL12	1	1	RA0502019	Trimming, 5KΩ (B)
RL13	1	1	RT0556314	56KΩ
RL14	1	1	RT0556314	56KΩ
RL15	1	1	RT0547214	4.7KΩ
RL16	1	1	RT0533314	33KΩ
RL20	1	1	RT0568414	680KΩ
RL21	1	1	RT0568414	680KΩ
RL22	1	1	RT0533414	330KΩ
RL23	1	1	RT0533414	330KΩ
RL24	1	1	RT0533214	3.3KΩ
RL25	1	1	RT0533214	3.3KΩ
RL26	1	1	RT0515214	1.5KΩ
RL27	1	1	RT0515214	1.5KΩ
RL28	1	1	RA0152004	Trimming, 1.5KΩ (B)
RL29	1	1	RA0152004	Trimming, 1.5KΩ (B)
				PL01-CAPACITORS
CL01	1	1	DF1515305	Film, 0.015μF ± 5%
CL02	1	1	DF1515305	Film, 0.015μF ± 5%
CL03	1	1	DF1668301	Film, 0.068μF ± 10%
CL04	1	1	DF1610401	Film, 0.1μF ± 10%
CL05	1	1	EA1060169	Electroly, 10μF, 16V
CL06	1	1	EA1060169	Electroly, 10μF, 16V
CL07	1	1	EA1060169	Electroly, 10μF, 16V
CL10	1	1	EA1060169	Electroly, 10μF, 16V
CL11	1	1	EA1060169	Electroly, 10μF, 16V
CL12	1	1	EA1060169	Electroly, 10μF, 16V
CL13	1	1	EA1060169	Electroly, 10μF, 16V
CL14	1	1	EA3360359	Electroly, 33μF, 35V
				PL01-SEMICONDUCTORS & PLUGS
HL01	1	1	HT307331C	Transistor, 2SC733 GR
HL02	1	1	HT307331C	Transistor, 2SC733 GR
HL03	1	1	HT307331C	Transistor, 2SC733 GR
HL06	1	1	HT307331C	Transistor, 2SC733 GR
HL07	1	1	HT307331C	Transistor, 2SC733 GR
HL08	1	1	HD1000105	Diode, IN60

U ..... U.S.A.
E ..... Europe

REF. DESIG.	U	E	PART NO.	DESCRIPTION
HL09	1	1	HD1000105	Diode, IN60
HL10	1	1	HD1000105	Diode, IN60
HL11	1	1	HD1000105	Diode, IN60
PL01 ≀ PL09	1	1	YP1000113	Plug
				GENERAL MISCELLANEOUS
0803	1	1	291816050	Bracket K
0811	2	2	51100306A	B. H. M. Screw B3 x 6
0813	2	2	51100306A	B. H. M. Screw B3 x 6
0814	2	2	51100306A	B. H. M. Screw B3 x 6
0815	2	2	51100306A	B. H. M. Screw B3 x 6
0819	2	2	51100306A	B. H. M. Screw B3 x 6
0824	2	2	51100306A	B. H. M. Screw B3 x 6
0828	3	3	51570305B	P. H. Tapt Screw P3 x 5 ST
0832	2	2	51570305B	P. H. Tapt Screw P3 x 5 ST
0908	2	2	291612001	Insulator
0911	1	1	289212201	Sticker
0916	1	1	291812002	Insulator
1034	2	2	51042608A	F. H. M. Screw F2.6 x 8
1111	2	2	51570306B	P. H. Tapt Screw P3 x 6 ST
1112	2	2	54050300R	T. L. Washer OR
1115	2	2	288610701	Sheet
1203	1	1	290416007	Bracket
1204	1	1	290416008	Bracket
1205	6	6	51100406A	B. H. M. Screw B4 x 6
1211	1	1	289226251	Pulley K
1216	2	2	51100306A	B. H. M. Screw B3 x 6
1311	1	1	257710602	Bearing
1312	1	1	141511801	Spacer
1313	2	2	51040306A	F. H. M. Screw F3 x 6
1320	2	2	51470306A	B. H. M. Screw S
1410	2	2	287105302	Cover
M001	1	1	IM1104213	DC Meter, Multipath, FM Tuning
M002	1	1	IM1104209	DC Meter, Dolby Level, Signal
C010	1	1	EA3360109	Electroly Cap., 33μF, 10V
C011	1	1	EA3360109	Electroly Cap., 33μF, 10V
J019	1	1	YJ0600061	Jack, 14P
1003	1	1	289227401	Reflector
1005	1	1	289227101	Holder
1006	2	2	51570306B	P. H. Tapt Screw P3 x 6 ST
1007	2	2	59030805P	Washer
1009	1	1	289227102	Holder
1010	2	2	51570306B	P. H. Tapt Screw P3 x 6 ST
1012	2	2	51480306A	B. H. M. Screw F
1013	2	2	51100304A	B. H. M. Screw B3 x 4
				FUNCTION LAMP BOARD-PY01
PY01	1	1	YD2918008	P. W. Board, Function Lamp (Print Only)
	1	1	ZZ2918008	P. W. Board Assembly
				PY01-MISCELLANEOUS
MY01 ≀ MY08	1	1	IN1008037	Lamp, 8V, 40mA

REF. DESIG.	U	E	PART NO.	DESCRIPTION
JY01 ≀ JY12	1	1	YP1000113	Plug
				DIAL LAMP BOARD-PZ01
PZ01	1	1	YD2892001	P. W. Board, Dial Lamp (Print Only)
	1	1	ZZ2918201	P. W. Board Assembly
				PZ01-MISCELLANEOUS
MZ01 ≀ MZ06	1	1	IN1008007	Lamp
JZ01 ≀ JZ10	1	1	YJ0800017	Socket
JZ11 ≀ JZ15	1	1	YP1000113	Plug
JZ17 ≀ JZ19	1	1	YP1000113	Plug
				GENERAL MISCELLANEOUS
M004	1	1	IN1008007	Lamp, Meter Lamp
M005	1	1	IN1008007	Lamp, Meter Lamp
J028	1	1	YJ0800019	Socket Meter Lamp
J029	1	1	YJ0800019	Socket Meter Lamp
1103	1	1	288627401	Reflector
1106	1	1	288627102	Holder
1107	2	2	51570306B	P. H. Tapt Screw P3 x 6 ST
1109	2	2	51480306A	B. H. M. Screw F.
S004	1	1	SP0201009	Plushswitch, Meter L/R
J007	1	1	YJ0100098	Jack, Dubbing Out
J008	1	1	YJ0100081	Jack, Dubbing In
0827	1	1	291816005	Bracket
R005	1	1	RK0504010	Variable Resist., 500KΩ (B)
R006	1	1	RK0504010	Variable Resist., 500KΩ (B)
R007	1	1	RK0504010	Variable Resist., 500KΩ (B)
R008	1	1	RK0504010	Variable Resist., 500KΩ (B)
0818	1	1	289216003	Bracket
				DOLBY TONE,TAPE MON. BOARD-PS01
PS01	1	1	YD2918005	P. W. Board, Dolby Tone/Tape Mon. (Print Only)
	1	1	ZZ2918005	P. W. Board Assembly
				SWITCH BOARD-PT01
PT01	1	1	YD2918006	P. W. Board, Switch (Print Only)
	1	1	ZZ2918006	P. W. Board.Assembly
				PT01-MISCELLANEOUS
ST01	1	1	SP0603011	Pushswitch
JT01 ≀ JT25	1	1	YP1000113	Plug

U ..... U.S.A.
E ..... Europe

REF. DESIG.	U	E	PART NO.	DESCRIPTION
R001	1	1	RS0503020	Variable Resist., 50KΩ (MN)
				MULTIPATH,HI BLEND CIRCUIT BOARD-PU01
PU01	1	1	YD2918007	P. W. Board, Multipath/Hi Blend (Print Only)
	1	1	ZZ2918007	P. W. Board Assembly
				PU01-SWITCH
SU01	1	1	SP0408001	Pushswitch
				PU01-RESISTORS **All resistors are ±5% and ¼W, unless otherwise indicated.**
RU01	1	1	GD0520314	20KΩ
RU02	1	1	GD0522214	2.2KΩ
RU03	1	1	GD0522214	2.2KΩ
RU04	1	1	GD0510314	10KΩ
RU05	1	1	RT0556214	5.6KΩ
RU06	1	1	RT0510214	1KΩ
RU07	1	1	GD0510414	100KΩ
RU08	1	1	RT0547414	470KΩ
RU09	1	1	RT0547414	470KΩ
RU10	1	1	RT0512314	12KΩ
RU11	1	1	RT0512314	12KΩ
RU12	1	1	RT0512314	12KΩ
RU13	1	1	RT0512314	12KΩ
RU14	1	1	RT0522514	2.2MΩ
RU15	1	1	RT0522514	2.2MΩ
RU16	1	1	RT0518514	1.8MΩ
RU17	1	1	RT0518514	1.8MΩ
RU18	1	1	RN0518514	1.8MΩ
RU19	1	1	RN0518514	1.8MΩ
RU20	1	1	GD0543314	43KΩ
RU21	1	1	GD0510414	100KΩ
RU22	1	1	GD0522314	22KΩ
RU23	1	1	GD0522314	22KΩ
RU24	1	1	GD0547214	4.7KΩ
RU25	1	1	GD0547214	4.7KΩ
RU26	1	1	GD0522414	220KΩ
RU27	1	1	GD0522414	220KΩ
RU28	1	1	GD0522114	220Ω
RU29	1	1	GD0522114	220Ω
RU30	1	1	RT0516214	1.6KΩ
RU31	1	1	RT0513214	1.3KΩ
RU32	1	1	GQ1033103	330Ω ± 10%, 3W
RU33	1	1	GQ1033103	330Ω ± 10%, 3W
RU34	1	1	GJ0515101	150Ω ± 5%, 1W
RU35	1	1	GJ0515101	150Ω ± 5%, 1W
				PU01-CAPACITORS
CU01	1	1	EA4750359	Electroly, 4.7μF, 35V
CU02	1	1	EA4750359	Electroly, 4.7μF, 35V
CU03	1	1	EA1060169	Electroly, 10μF, 16V
CU04	1	1	EA4750359	Electroly, 4.7μF, 35V
CU05	1	1	DF1622305	Film, 2200PF±5%, 50V
CU06	1	1	DF1547205	Film, 4700PF±5%, 50V
CU07	1	1	DF1547205	Film, 4700PF±5%, 50V
CU08	1	1	DF1547205	Film, 4700PF±5%, 50V
CU09	1	1	DF1547205	Film, 4700PF±5%, 50V
CU10	1	1	DF1522205	Film, 2200PF±5%, 50V
CU11	1	1	DF1522205	Film, 2200PF±5%, 50V
CU12	1	1	DF1510205	Film, 1000PF±5%, 50V

REF. DESIG.	U	E	PART NO.	DESCRIPTION
CU13	1	1	DF1510205	Film, 1000PF ± 5%, 50V
CU14	1	1	DF1722405	Film, 0.22μF ± 20%, 50V
CU15	1	1	DF1722405	Film, 0.22μF ± 20%, 50V
CU16	1	1	EV4750356	Electroly, 4.7μF, 35V
CU17	1	1	EV4750356	Electroly, 4.7μF, 35V
CU18	1	1	DK1750201	Ceramic, 5000PF, 50V
CU19	1	1	DK1750201	Ceramic, 5000PF, 50V
CU20	1	1	EA4760359	Electroly, 47μF, 35V
CU21	1	1	EA1060169	Electroly, 10μF, 16V
				PU01-SEMICONDUCTORS & PLUGS
HU01	1	1	HT308282A	Transistor, 2SC828R,S
HU02	1	1	HT308282A	Transistor, 2SC828R,S
HU03	1	1	HD1000105	Diode, IN60
HU04	1	1	HD1000105	Diode, IN60
HU05	1	1	HT313272A	Transistor, 2SC1327S,T
HU06	1	1	HT313272A	Transistor, 2SC1327S,T
HU07	1	1	HT107223A	Transistor, 2SA722S,T,U
HU08	1	1	HT107223A	Transistor, 2SA722S,T,U
JU01 ~ JU21	1	1	YP1000113	Plug
				GENERAL MISCELLANEOUS
S005	1	1	SP0101017	Pushswitch, Power Supply
0822	1	1	290416006	Bracket
0823	2	2	51100306A	B. H. M. Screw B3 x 6
J009	1	1	YJ0100098	Jack, Phone
0831	1	1	291816006	Bracket
2306	1	1	62030039W	Lug
1016	1	1	289205101	Guide
1018	1	1	289226252	Pulley K
1025	1	1	289226253	Pulley K
1032	4	4	51570305B	P. H. Tapt Screw P3 x 6ST
1316	1	1	285310650	Bearing K
1326	1	1	51640412D	Set Screw C.P.
1327	1	1	54040402N	Spring Washer
1328	1	1	53110403E	Hexagon Nut
0503	1		291816001	Bracket
0505		1	291816022	Bracket
0511	1		145525903	Bush
0513	4	4	51100308S	B. H. M. Screw B3 x 8
0514	4	4	53110303A	Hexagon Nut
0515	4	4	54050300R	T. L. Washer OR
0526		1	282125901	Bush
0527		2	53110303A	Hexagon Nut
0528		2	54050300R	T. L. Washer OR
0529		2	51060316A	P. H. M. Screw P3 x 16
0530		2	55060305S	T. R. Rivet
0532		1	284906702	Cap
0603	4	4	51100306S	B. H. M. Screw B3 x 6
0604	4	4	53110303A	Hexagon Nut
0606	2	2	51100306S	B. H. M. Screw B3 x 6
0609	8	8	51100306S	B. H. M. Screw B3 x 6
0610	8	8	53110303A	Hexagon Nut
0613	3	3	53228059E	Nut
0619	1	1	54050400R	T. L. Washer OR
0720	3	3	51100306S	B. H. M. Screw B3 x 6
0722	1	1	145525903	Bush

U ..... U.S.A.
E ..... Europe

REF. DESIG.	U	E	PART NO.	DESCRIPTION
J002	1	1	YT0101003	Terminal, Ground
J003	1	1	YT0204008	Terminal, Phono/Aux, 4P
J004	1	1	YT0208006	Terminal, Tape In, Out, 8P
J006	1	1	YT0201009	Terminal, Quadradial, 1P
J010	1	1	YT0304008	Terminal, Main Spk
J011	1	1	YT0304008	Terminal, Remote Spk
J012	1		YJ0400048	Plug, AC Outlet
J013	1		YJ0400048	Plug, AC Outlet
J014	1		YJ0800012	Socket, Fuse Holder
W002	1		YC0240010	AC Cord
F001	1		FS1080004	Fuse, 8A UL
G001	1	1	BF1040003	Printed Compo.
R014	1	1	RA0203007	Variable Resist., 20KΩ (B)
L001	1	1	LF1120038	Ant. Coil, AM
0705	1	1	257816052	Bracket K
0710	1	1	281927103	Holder
0712	2	2	51100308S	B. H. M. Screw B3 x 8
0713	2	2	53110303E	Hexagon Nut
0716	2	2	51100310S	B. H. M. Screw B3 x 10
0717	2	2	53110303E	Hexagon Nut
				ANTENNA TERMINAL BOARD-PV01
PV01	1	1	YD2918009	P. W. Board, Antenna Terminal (Print Only)
	1	1	ZZ2918009	P. W. Board Assembly
				PV01-MISCELLANEOUS
LV01	1	1	LB3007526	Balun Coil 300Ω-75Ω
LV02	1	1	LC1154002	Choke Coil
JV01	1	1	YP1000113	Plug
JV02	1	1	YP1000113	Plug
JV03	1	1	YP1000113	Plug
J001	1	1	YT0304007	Terminal, AM/FM Ant.
0607	1	1	291616005	Bracket
				FM CAL.& DE-EMPHASIS CIRCUIT BOARD-PC01
PC01	1	1	YD2892011	P. W. Board, FM Cal.& FM De-Emphasis (Print Only)
	1	1	ZZ2918111	P. W. Board Assembly
				PC01-RESISTORS & PLUGS
RC01	1	1	RT0515414	Resistor, 150KΩ ± 5%, ¼W
RC02	1	1	RT0515414	Resistor, 150KΩ ± 5%, ¼W
RC03	1	1	RT0582214	Resistor, 8.2KΩ ± 5%, ¼W
RC04	1	1	RT0582214	Resistor, 8.2KΩ ± 5%, ¼W
RC05	1	1	RK0203030	Variable Resist., 20KΩ(B)
RC06	1	1	RK0203030	Variable Resist., 20KΩ(B)
JC01	1	1	YP1000113	Plug
JC02	1	1	YP1000113	Plug
JC03	1	1	YP1000113	Plug
JC04	1	1	YP1000113	Plug
JC05	1	1	YP1000113	Plug
JC06	1	1	YP1000113	Plug

REF. DESIG.	U	E	PART NO.	DESCRIPTION
				GENERAL MISCELLANEOUS
C002	1	1	DK1710301	Ceramic Cap., 0.01μF ± 20%, 50V
C003	1	1	DK1710301	Ceramic Cap., 0.01μF ± 20%, 50V
C004	1	1	DK1710301	Ceramic Cap., 0.01μF ± 20%, 50V
0620	1	1	62041760W	Lug,
R009	1		RC1022512	Resistor, 2.2MΩ ± 10%, ½W
2322	1	1	62030039W	Lug
C015	1	1	DK1710301	Ceramic Cap., 0.01μF ± 20%, 50V
J005	1	1	YT0204009	Terminal, Pre Out/Main In
2325	1	1	62030039W	Lug
1403	1	1	291830201	Dial
1408	1	1	289210701	Sheet
S001	1	1	SR1006015	Rotaly Switch, Selector
S002	1	1	SR2505002	Rotaly Switch, Dolby
R012	1	1	RT0539214	Resistor, 3.9KΩ ± 5%, ¼W
C013	1		DF1522205	Film Cap., 2200PF ± 5%, 50V
C013		1	DF1510205	Film Cap., 1000PF ± 5%, 50V
S003	1	1	SR0405007	Rotaly Switch, Mode
R002	1	1	RT0510214	Resistor, 1KΩ ± 5%, ¼W
R003	1	1	RT0510214	Resistor, 1KΩ ± 5%, ¼W
R004	1	1	RT0515114	Resistor, 150Ω ± 5%, ¼W
C014	1		DF1522205	Film Cap, 2200PF ± 5%, 50V
C014		1	DF1510205	Film Cap, 1000PF ± 5%, 50V
1718	1	1	291726703	Heat Sink
1722	4	4	51100310B	B. H. M. Screw B3 x 10
1723	4	4	54040302N	Spring Washer
1724	4	4	53110301E	Hexagon Nut
H009	1	1	HD2001608	Rectifier, SG-5TS
H010	1	1	HD2001708	Rectifier, SG-5TR
C006	1	1	DF1710453	Film Cap., 0.1μF ± 20%, 250V
C007	1	1	DF1710453	Film Cap., 0.1μF ± 20%, 250V
L003	1	1	LC1332002	Choke Coil, 3.3μH
C005	1	1	DK1710301	Ceramic Cap., 0.01μF ± 20%, 50V
J016	1	1	YL0105011	Plug, 5P (UL)
R010	1	1	GJ0522203	Resistor, 2.2KΩ ± 5%, 3W
R011	1	1	GJ0522203	Resistor, 2.2KΩ ± 5%, 3W
J015	1	1	YL0105011	Plug, 5P (UL)
2008	1	1	291810905	Shield
2010	1	1	291812001	Insulator
2123	1	1	289216012	Bracket
2125	1	1	62030039W	Lug
R013	1	1	RA0503014	Variable Resist., 50KΩ (B)
W012		1	YB0007001	Connective Cord
W013		1	YB0007001	Connective Cord
J031		1	YL0106004	Terminal, Voltage Conversion

U ..... U.S.A.
E ..... Europe

REF. DESIG.	U	E	PART NO.	DESCRIPTION
2210		1	289216006	Bracket
2211		1	285412001	Insulator
2212		2	51100310E	B. H. M. Screw B3 x 10
2213		5	54060300R	T. L. Washer IR
				FUSE BOARD-PR01
PR01		1	YD2892010	P. W. Board, Fuse (Print Only)
		1	ZZ2892810	P. W. Board Assembly
				PR01-MISCELLANEOUS
FR01		1	FS1060002	Fuse, 6A
FR02		1	FS1015003	Fuse, 1.5A
FR03		1	FS1015003	Fuse, 1.5A
FR03		1	FS1020005	Fuse, 2A
JR01		1	YJ0800020	Jack
JR02		1	YJ0800020	Jack
JR03		1	YJ0800020	Jack
JR04		1	YJ0800020	Jack
JR05		1	YJ0800020	Jack
JR06		1	YJ0800020	Jack
JR07		1	YJ0800020	Jack
JR08		1	YJ0800020	Jack
JR09		1	YP1000099	Plug
JR10		1	YP1000099	Plug
JR11		1	YP1000099	Plug
JR12		1	YP1000099	Plug
JR13		1	YP1000099	Plug
JR14		1	YP1000099	Plug
JR15		1	YP1000099	Plug
JR16		1	YP1000099	Plug
				GENERAL MISCELLANEOUS
2525	1	1	138200503	Clamper
2234	1	1	138200503	Clamper
2232	1	1	138200503	Clamper
0903	1	1	291810907	Shield
0904	1	1	288912005	Insulator
0906	2	2	291812004	Insulator
0221	4	4	275905701	Leg
0222	4	4	51490410S	B. H. M. Screw F. S.
0733	8	8	51100306S	B. H. M. Screw B3 x 6
0905	4	4	51100304A	B. H. M. Screw B3 x 4
0913	1	1	261105501	Collor
1207	14	14	51570306B	P. H. Tapt Screw P3 x 6
1503	1	1	291810550	Chassis K
1512	2	2	289225901	Bush
1603	4	4	51490614A	B. H. M. Screw F. S.
1604	4	4	53110601A	Hexagon Nut
1605	4	4	54020801A	Flat Washer P
1616	4	4	515704088	P. H. Tapt Screw P4 x 8 ST
1618	1	1	291816004	Bracket
1620	2	2	51100508E	B. H. M. Screw B5 x 8
1621	2	2	54020501E	Flat Washer P
1622	2	2	54040502N	Spring Washer
1624	2	2	51570408B	P. H. Tapt Screw P4 x 8 ST
1625	2	2	54050400R	T. L. Washer OR
1631	2	2	51100508E	B. H. M. Screw B5 x 8
1632	2	2	54040502N	Spring Washer
1711	4	4	51100306S	B. H. M. Screw B3 x 6
1720	2	2	51570308B	P. H. Tapt Screw P3 x 8 ST
1920	8	8	51570306B	P. H. Tapt Screw P3 x 6 ST
1926	1	1	291810901	Shield
1927	4	4	51570306B	P. H. Tapt Screw P3 x 6 ST
2003	4	4	288810102	Support
2009	2	2	51570306B	P. H. Tapt Screw P3 x 6 ST
2013	4	4	288810102	Support
2029	2	2	51570306B	P. H. Tapt Screw P3 x 6 ST
2103	4	4	285610102	Support
2104	1	1	281810107	Support
2107	1	1	285610902	Shield
2108	5	5	51100304E	B. H. M. Screw B3 x 4
2113	4	4	51100306S	B. H. M. Screw B3 x 6
2117	2	2	288605501	Collar
2118	2	2	51100310S	B. H. M. Screw B3 x 10
2124	2	2	51570305B	P. H. Tapt Screw P3 x 5 ST
2131	2	2	288616011	Bracket
2132	2	2	288612009	Insulator
2133	4	4	51570306B	P. H. Tapt Screw P3 x 6 ST
2203	2	2	51100306S	B. H. M. Screw B3 x 6
2214		2	53110503A	Hexagon Nut
2215		2	54040502N	Spring Washer
2216		1	289212006	Insulator
2217		2	51100312S	B. H. M. Screw B3 x 12
2221		1	285416003	Bracket
2222		2	51570306B	P. H. Tapt Screw P3 x 6 ST
2223		2	51100306S	B. H. M. Screw
2229	2	2	291811802	Spacer
2235	1	1	53110503A	Hexagon Nut
2327	1	1	138200503	Clamper
2328	1	1	51570306B	P. H. Tapt Screw P3 x 6 ST
2329	1	1	54050300R	T. L. Washer OR
2303	2	2	281805603	Buffer
2307	1	1	51570306B	P. H. Tapt Screw P3 x 6 ST
2309	1	1	138200503	Clamper
2310	1	1	51570306B	P. H. Tapt Screw P3 x 6 ST
2311	1	1	54050300R	T. L. Washer OR
2313	2	2	51570306B	P. H. Tapt Screw P3 x 6 ST
2314	2	2	54050300R	T. L. Washer OR
2316	1	1	51570306B	P. H. Tapt Screw P3 x 6 ST
2317	1	1	54050300R	T. L. Washer OR
2319	1	1	51570306B	P. H. Tapt Screw P3 x 6 ST
2320	1	1	54050300R	T. L. Washer OR
2323	1	1	51570306B	P. H. Tapt Screw P3 x 6 ST
2326	1	1	51570306B	P. H. Tapt Screw P3 x 6 ST
2331	1	1	288600505	Clamper
2332	2	2	288600506	Clamper
2334	2	2	288600505	Clamper
2518	4	4	51570306B	P. H. Tapt Screw P3 x 6 ST
L004	1		TS6330207	Transformer
L004		1	TS6330208	Transformer
C008	1	1	EC1590701	Electroly Cap., 15μF + 50%, -10%, 70V
C009	1	1	EC1590701	Electroly Cap., 15μF + 50%, -10%, 70V
J017	1	1	YJ0600062	Jack
J018	1	1	YJ0600063	Jack
0113	3	3	289610701	Sheet
0116	4	4	52017039J	Bolt
0118	1	1	291605501	Collar
0119	1	1	289205502	Collar
0120	1	1	51340308P	F. H. Tap Screw
0207	4	4	51480406S	B. H. M. Screw F
0208	4	4	51122605S	T. H. M. Screw T2.6 x 5
0217	12	12	51100406S	B. H. M. Screw B4 x 6
0303	1	1	290415404	Knob, Power Switch

U ..... U.S.A.
E ..... Europe

REF. DESIG.	U	E	PART NO.	DESCRIPTION
0304	1	1	285015401	Knob, Slide Volume
0305	4	4	288615401	Knob, Dolby Level
0306	12	12	288615403	Knob, Pushswitch
0308	5	5	281815403	Knob, 24φ
0403	1		291826501	Indicator
0405		1	291826503	Indicator
0412	2	2	51100305S	B. H. M. Screw B3 x 5
0416	1	1	257886101	Label, UL Caution
0417	1	1	257886102	Label, Do not remove cover.
0418	1	1	257886103	Label, See marking on bottom.
0419	1	1	250626506	Indicator, Do not use as handle.
0423	1		951110102	Label, UL
0424	1		951091102	Label, UL Factory Cord No.
0434	1	1	288686102	Label, Dolby
0435	1	1	288686101	Label, Marantz
1323	1	1	285011202	Shaft
1324	1	1	54040402N	Spring Washer
1414	1	1	287311802	Spacer
1417	1	1	289226902	Protector
1418	2	2	51570306B	P. H. Tapt Screw P3 x 6 ST
1421	1	1	291826901	Protector
1422	2	2	51570306B	P. H. Tapt Screw P3 x 6 ST
1425	1	1	281912005	Insulator
1431	1	1	289226901	Protector
1432	2	2	51100304S	B. H. M. Screw B3 x 4
2005	1	1	288910904	Shield
2006	4	4	51100304S	B. H. M. Screw B3 x 4
2015	1	1	291810906	Shield
2016	4	4	51100306S	B. H. M. Screw B3 x 6
2031	1	1	288610902	Shield
2032	2	2	51100304S	B. H. M. Screw B3 x 4
2033	2	2	51570306B	P. H. Tapt Screw P3 x 6 ST
2521	1	1	289010903	Shield
2522	4	4	289205601	Buffer
2523	2	2	51100304S	B. H. M. Screw B3 x 4
2614	1	1	56382540G	Eyelet
2903	1	1	257785401	Guarantee Card
2906	1	1	257785102	Instructions
2908	1		257781301	Envelope
2909		1	281881301	Envelope
2926	1	1	ZA0200007	Ext. Antenna, FM
3003	1	1	291880101	Packing Case, Inner
3004	1	1	291880111	Packing Case, Outer
3012	1	1	289280301	Partitioner, Upper
3013	1	1	289280302	Partitioner, Lower
3018	1	1	901534543	Polyethylen Bag, Set
3020	1	1	901302501	Polyethylen Bag, Printed Matter
3021	1	1	901302501	Polyethylen Bag, Accessories
3023	1	1	102980401	Sleeve
3024	1	1	281905601	Buffer
3025	2	2	273182101	Silicagel
3026		1	956000004	Hang Tag
3029	4		952281501	Serial NO Card
3031		4	952301511	Serial NO Card
2803	1		291885101	Instructions, Set
2804		1	291885122	Instructions, Set
2811	1		291885601	Schematic Diagram
2813		1	291885603	Schematic Diagram
2817		1	281885108	Instructions, Accessories
2821	1	1	281885110	Instructions, 4-CH
2823	1	1	281885104	Instructions, Packing

TECHNICAL SPECIFICATIONS

PREAMPLIFIER SECTION

Dynamic Range	Phono input: 100dB above 1.5μV equivalent noise input

Note: Dynamic Range is the ratio in dB of phono overload (110mV) to equivalent input noise (1.5μV).

Input Sensitivity and Impedance	Phono: 1.8 mV, 47K ohms High Level: 180 mV, 100K ohms
Output Level and Impedance	Tape Recorder: 1V into 47K ohms
Pre-Out Output Impedance	1V, 900 ohms
Phono Frequency Response	30Hz to 15kHz ± 1dB (RIAA)
Noise-Aux	–80dB
Tone Controls	Treble: ± 10dB at 15kHz Bass: ± 10dB at 50Hz Mid-Range: ± 5dB at 700Hz
Filters	Hi Filter: 9kHz, 12dB per octave Low Filter: 50Hz, 12dB per octave
Loudness Compensation	7dB at 100Hz 4dB at 10kHz

AMPLIFIER SECTION

Headphones Output	0.7V into 8 ohms at rated distortion
Input Sensitivity for MAIN IN	1V
Rated Power Output (Continuous average power per channel, all channels driven)	
Power Output	125 Watts, 4 ohms 125 Watts, 8 ohms 75 Watts, 16 ohms
Power Band	20Hz to 20kHz
THD	0.15%
Frequency Response	±2dB, 5Hz to 70kHz ±1dB, 10Hz to 30kHz
Damping Factor	40 at 1kHz

FM SECTION

Quieting Slope	1.9μV for 30dB, 5μV for 55dB 10μV for 60dB, 50μV for 70dB
Ultimate Quieting	50μV for 70dB
Selectivity	Alternate channel, better than 75dB
Capture Ratio	1.5dB
Muting Threshold	Muting threshold variable from 8μV to 40μV
Stereo Separation	42dB at 1kHz, 27dB at 15kHz
Total Harmonic Distortion	Stereo: Less than 0.3% Mono: Less than 0.2%
Frequency Response	± 1dB, 30Hz to 15kHz
Total Spurious Rejection	Better than 90dB
Image Rejection	Better than 90dB
AM Suppression	Better than 60dB
IF Rejection	Better than 100dB
Antenna Impedance	300 ohm Balanced, 75 ohm unbalanced
Quadradial Output	300 mV, 15K ohms for ± 75kHz Deviation

AM SECTION

AM Sensitivity	Better than 40μV

Selectivity	Adjacent channel, 1000kHz, better than 30dB
AM Bandwidth	(–6dB) 7kHz
Image Rejection	1400kHz, better than 70dB

GENERAL

Power Requirements	220V∿50/60Hz
(This unit can be converted by a qualified technician to operate 110/120/240V∿50/60Hz)	
Unit Dimensions	Height: 5-3/8″ (without feet)
Dimensions – Panel Width	19-5/16″-490mm
– Panel Height	5-3/4″-146mm
– Depth	15-3/16″-386mm
Weight – Unit alone	49.5lbs-22.5Kg
– Packed for Shipment	57.2lbs-26.0Kg

* These specifications and exterior designs may be changed for improvement without advance notice.

SERVICE INFORMATION FOR EUROPEAN MODEL

The information contained here in included the rear panel and main chassis component locations, voltage conversion, FTZ regulation and schematic diagram.

For the circuit description, alignment method and repairing hints, refer to the original service manual.

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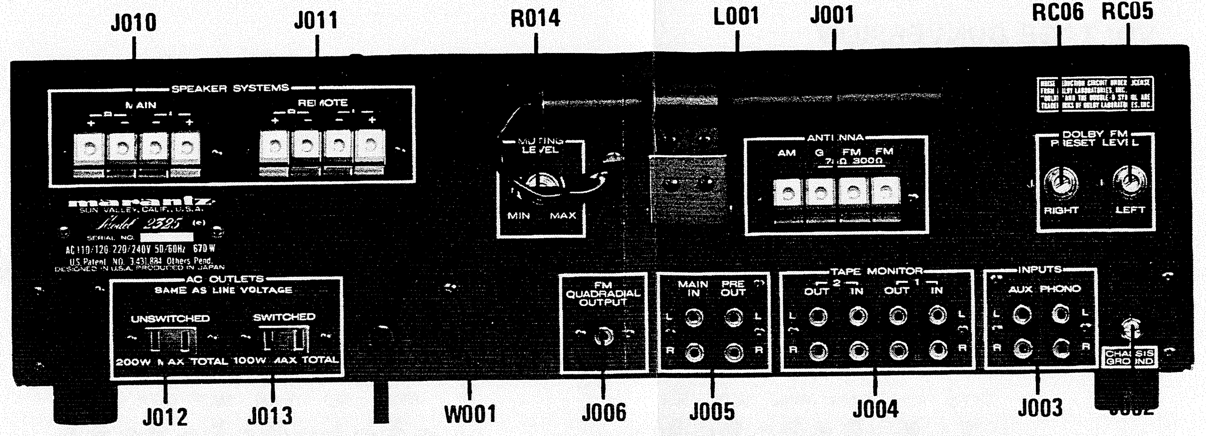
Voltage Conversion Chart 46

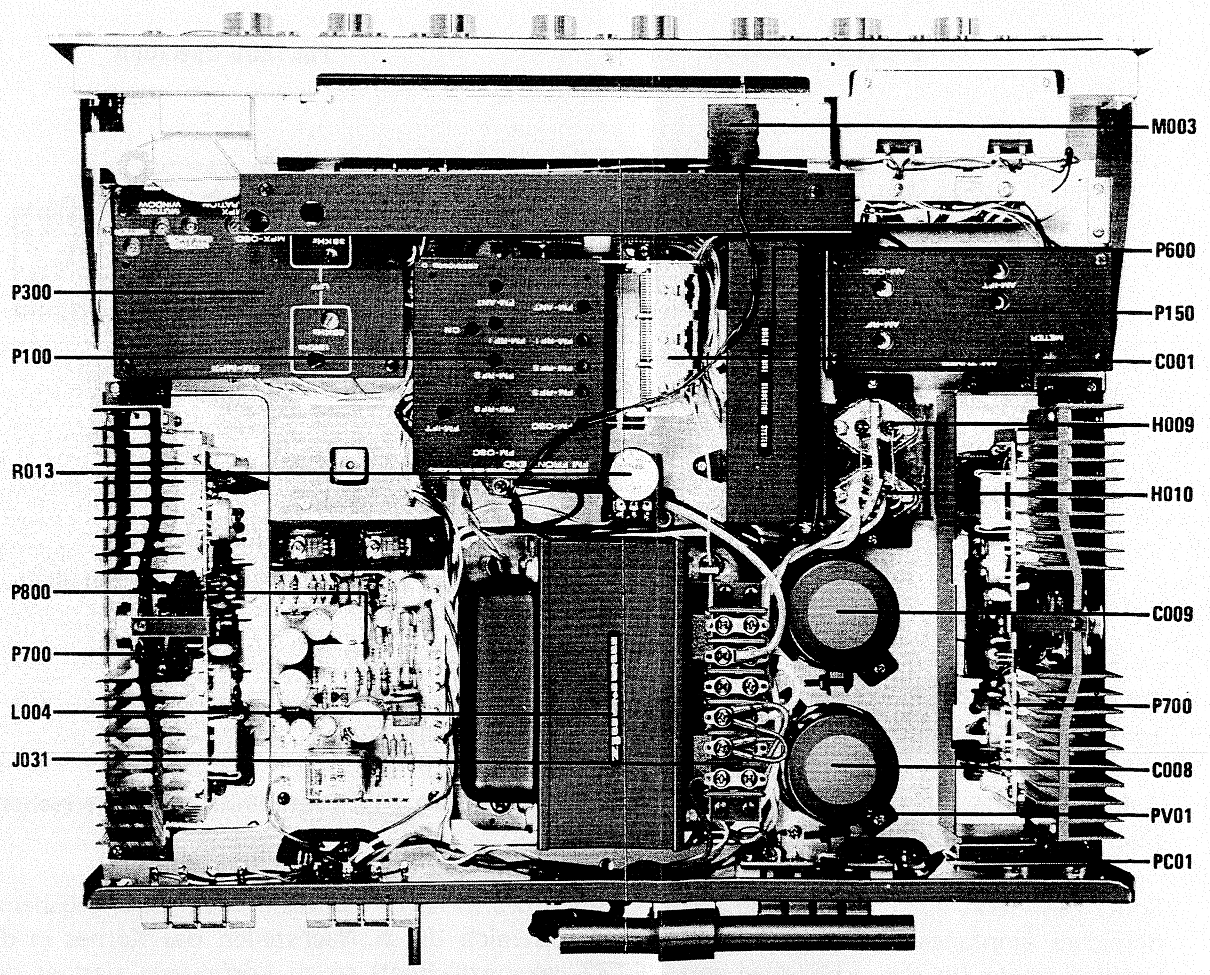
FTZ Regulation 46

Schematic Diagram 49



J010
J011
R014
L001
J001
RC06
RC05
J012
J013
W001
J006
J005
J004
J003
SPEAKER SYSTEMS
MAIN
REMOTE
ANTENNA
DOLBY FM PRESET LEVEL
RIGHT
LEFT
MIN
MAX
AC OUTLETS SAME AS LINE VOLTAGE
UNSWITCHED
SWITCHED
200W MAX TOTAL
100W MAX TOTAL
FM QUADRADIAL OUTPUT
MAIN IN
PRE OUT
TAPE MONITOR
OUT
IN
INPUTS
AUX
PHONO
CHASSIS GROUND

Figure 26. Rear Panel Adjustments and Component Locations



M003
P600
P300
P150
P100
C001
H009
R013
H010
P800
C009
P700
L004
P700
C008
J031
PV01
PC01

Figure 27. Main Chassis Component Locations (Top View)

VOLTAGE CONVERSION

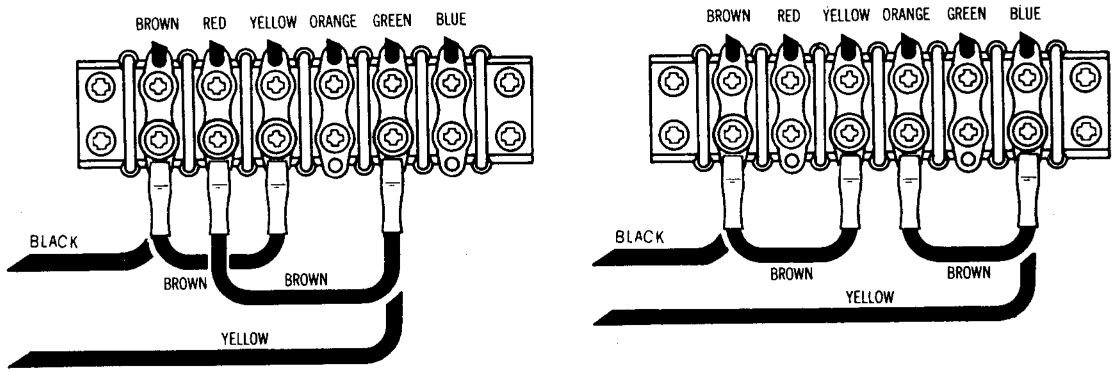
This model is equipped with a universal power transformer to permit operation at 110, 120, 220 and 240 V AC 50 to 60 Hz.

To convert the unit to the required voltage perform the following steps:

(1) Remove the lid (top).

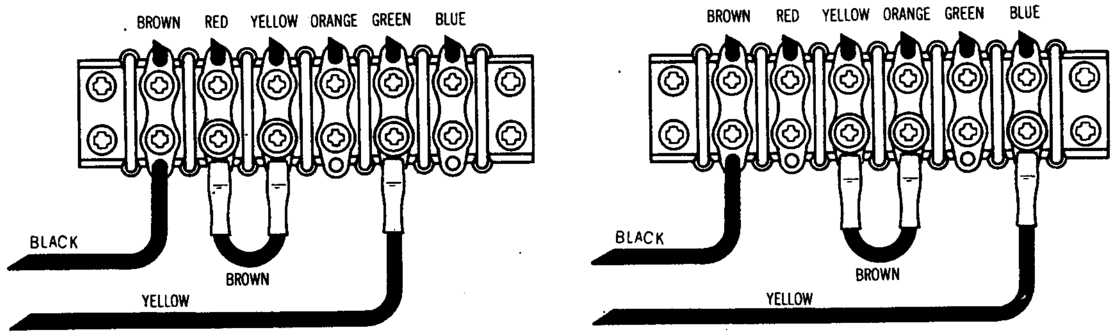
(2) Change the jumper wires as illustrated below for the required AC voltage.

CAUTION: DISCONNECT POWER SUPPLY CORD FROM AC OUTLET BEFORE CONVERTING VOLTAGE.


BROWN
RED
YELLOW
ORANGE
GREEN
BLUE
BLACK
BROWN
BROWN
YELLOW
BROWN
RED
YELLOW
ORANGE
GREEN
BLUE
BLACK
BROWN
BROWN
YELLOW

For 110V Operation

For 120V Operation


BROWN
RED
YELLOW
ORANGE
GREEN
BLUE
BLACK
BROWN
YELLOW
BROWN
RED
YELLOW
ORANGE
GREEN
BLUE
BLACK
BROWN
YELLOW

For 220V Operation

For 240V Operation

Figure 28. Voltage Conversion Chart

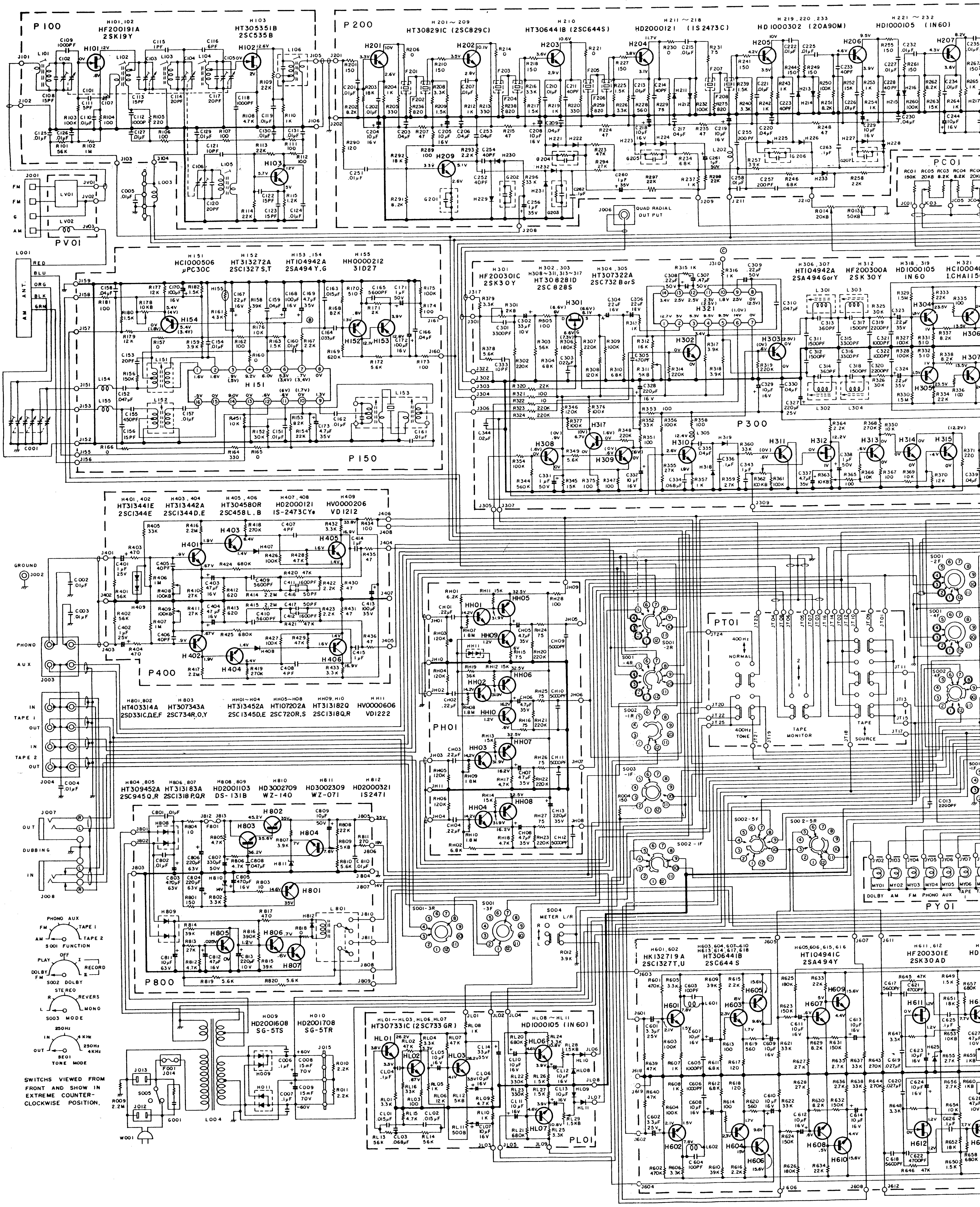
FTZ REGULATION

Instruction for the use in the range other than specified in FTZ codes

Achtung für die Leute, die in dem Gebiet wohnen, wo die FTZ-Bestimmungen vorherrschend sind.

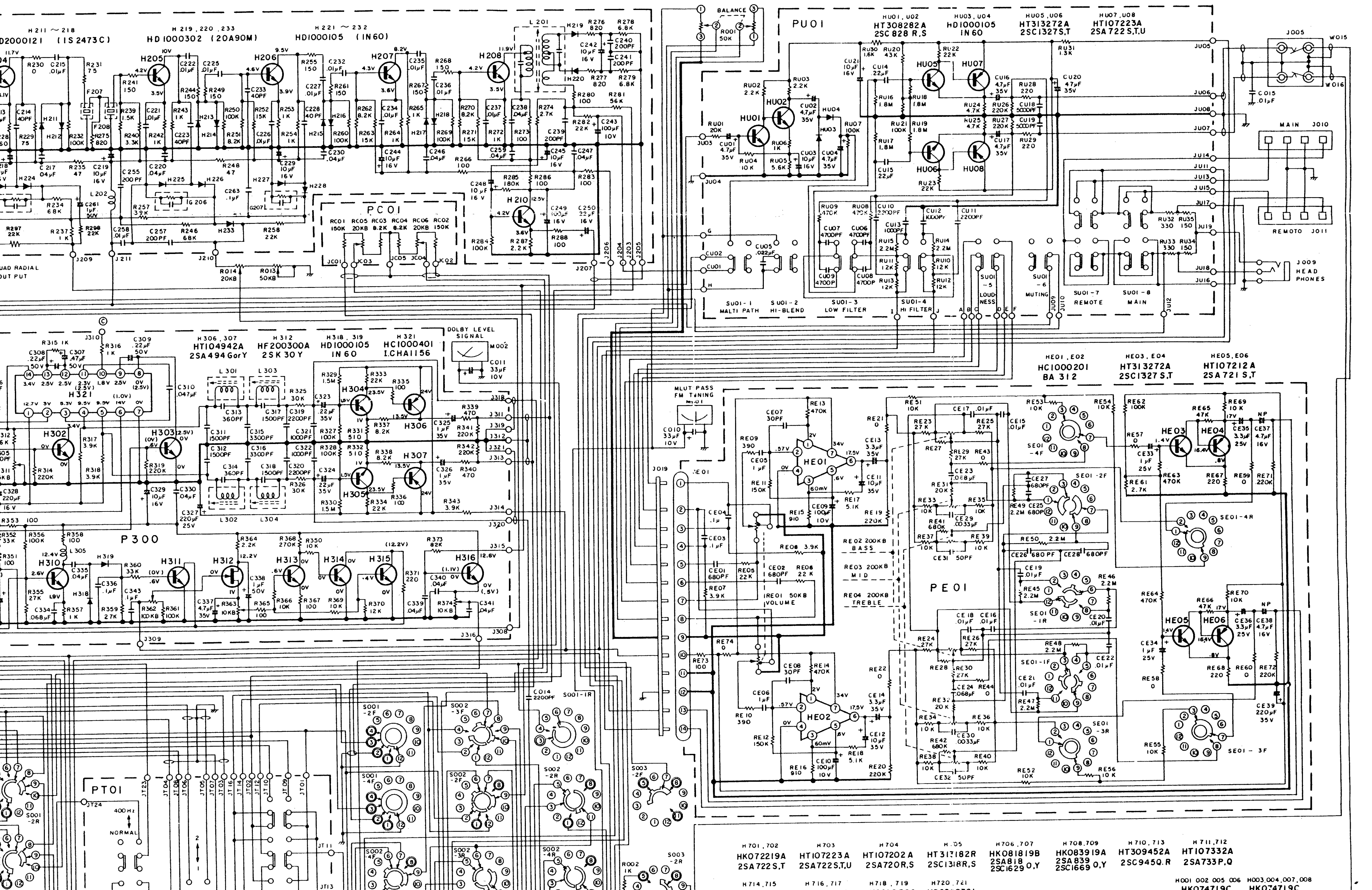
Sollte das Gerät auch für Frequenzen auszerhalb des in den FTZ-Bestimmungen angegebenen Bereiches empfangebereit sein, bitten wir, den Bereich durch Nachstellen des Kernes in der Oszillatorspule (in der Abbildung mit "FTZ" gekennzeichnet) so zu korrigieren, dass er den Bestimmungen entspricht.

NOTE


P100
H101, 102 HF200191A 2SK19Y
H103 HT305351B 2SC535B
P200
H201 ~ 209 HT308291C (2SC829C)
H210 HT306441B (2SC644S)
H211 ~ 218 HD2000121 (1S2473C)
H219, 220, 233 HD1000302 (20A90M)
H221 ~ 232 HD1000105 (1N60)
PC01
QUAD RADIAL OUT PUT
FM
FM
G
AM
PV01
L001
RED
BLU
ORG
BLK
GRN
AM ANT.
C001
P150
H151 HC1000506 μPC30C
H152 HT313272A 2SC1327S,T
H153, 154 HT104942A 2SA494Y,G
H155 HH0000212 31D27
P300
H301 HF200301C 2SK30Y
H302, 303 H308 ~ 311, 313 ~ 317 HT308281D 2SC828S
H304, 305 HT307322A 2SC732B or S
H306, 307 HT104942A 2SA494G or Y
H312 HF200300A 2SK30Y
H318, 319 HD1000105 1N60
H321 HC100040 I.CHA1150
P400
H401, 402 HT313441E 2SC1344E
H403, 404 HT313442A 2SC1344D,E
H405, 406 HT304580R 2SC458L,B
H407, 408 HD2000121 1S-2473CYe
H409 HV0000206 VD1212
GROUND
PHONO
AUX
IN
TAPE 1
OUT
IN
TAPE 2
OUT
OUT
DUBBING
IN
PH01
HH01, 802 HT403314A 2SD331C,D,E,F
H803 HT307343A 2SC734R,O,Y
HH01 ~ H04 HT313452A 2SC1345D,E
HH05 ~ H08 HT107202A 2SC720R,S
HH09, H10 HT313182Q 2SC1318Q,R
HH11 HV0000606 VD1222
PT01
400Hz NORMAL
400Hz TONE
TAPE MONITOR
TAPE SOURCE
S001 -4R
S001 -2R
S002 -1R
S003 -1F
S002 - 5F
S002 - 5R
S002 - 1F
S001 - 3R
S001 - 3F
S004 METER L/R
P800
H804, 805 HT309452A 2SC945Q,R
H806, 807 HT313183A 2SC1318P,Q,R
H808, 809 HD2001103 DS-131B
H810 HD3002709 WZ-140
H811 HD3002309 WZ-071
H812 HD2000321 1S2471
L801
H009 HD2001608 SG-5TS
H010 HD2001708 SG-5TR
F001
S005
G001
W001
L004
PL01
HL01 ~ HL03, HL06, HL07 HT307331C (2SC733GR)
HL08 ~ HL11 HD1000105 (1N60)
H601, 602 HK132719A 2SC1327T,U
H603, 604, 607 ~ 610, H613, 614, 617, 618 HT306441B 2SC644S
H605, 606, 615, 616 HT104941C 2SA494Y
H611, 612 HF200301E 2SK30AD
DOLBY AM FM PHONO AUX TAPE
PY01
PHONO AUX
FM TAPE 1
AM TAPE 2
S001 FUNCTION
PLAY OFF I RECORD
DOLBY FM
S002 DOLBY
STEREO
R REVERS
L MONO
S003 MODE
250Hz
IN 4KHz
OUT 250Hz 4KHz
BE01 TONE MODE
SWITCHS VIEWED FROM FRONT AND SHOW IN EXTREME COUNTER-CLOCKWISE POSITION.

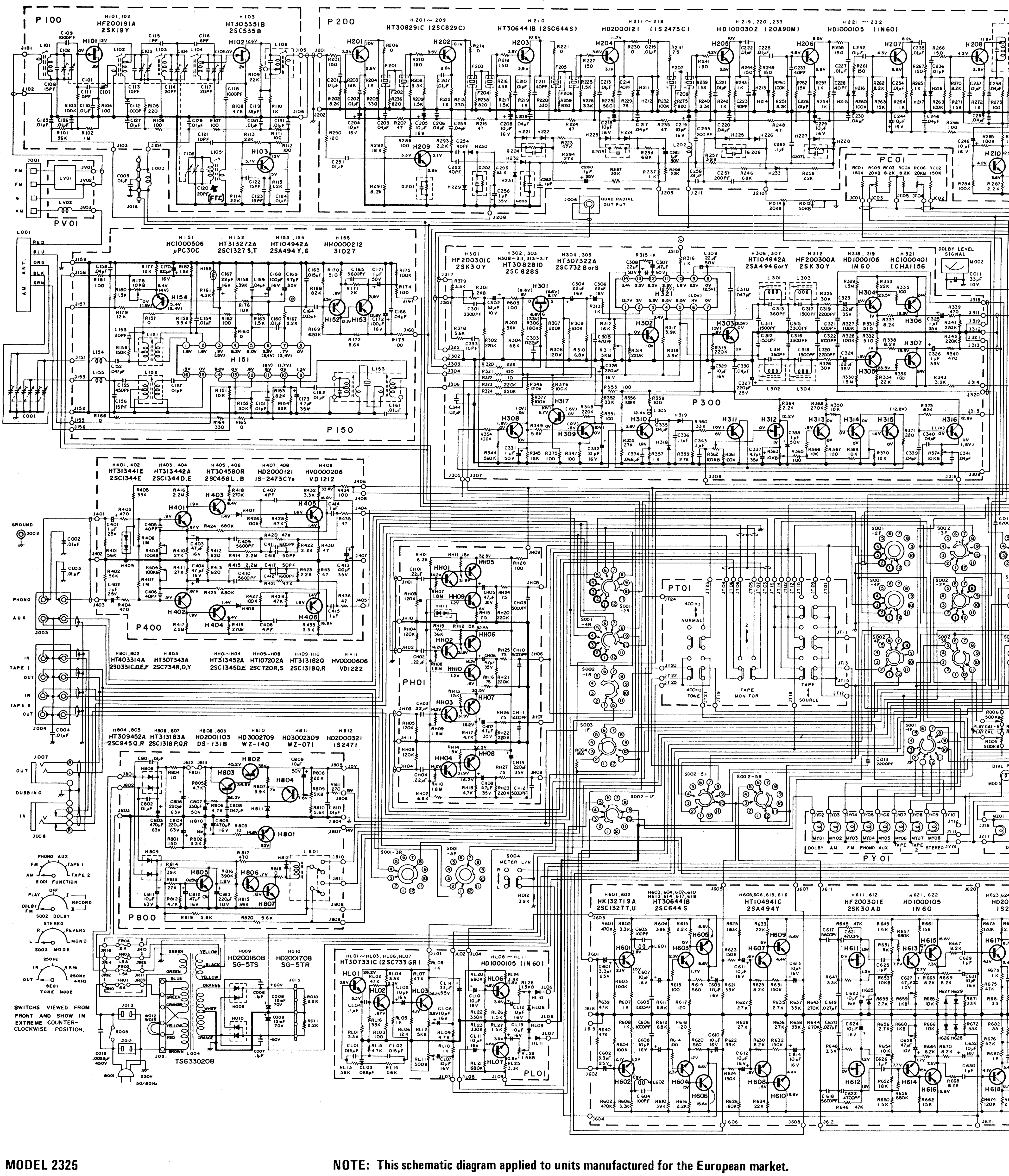
MODEL 2325

NOTE: This schematic diagram applied to units manufactured for the U.S.A. market.


PU01
BALANCE
J005
W015
W016
MAIN J010
REMOTO J011
J009 HEAD PHONES
PC01
S001-1 MALTI PATH
S001-2 HI-BLEND
S001-3 LOW FILTER
S001-4 HI FILTER
S001-5 LOUDNESS
S001-6 MUTING
S001-7 REMOTE
S001-8 MAIN
DOLBY LEVEL SIGNAL
M002
P300
MLUT PASS FM TUNING
PE01
RE02 200KB BASS
RE03 200KB MID
RE04 200KB TREBLE
RE01 50KB VOLUME
HE01
HE02
HE03
HE04
HE05
HE06
PT01
400Hz NORMAL
400Hz TONE
TAPE MONITOR
TAPE SOURCE
PLAY CAL-L
PLAY CAL-R
REC LEVEL-L
REC LEVEL-R
METER ILLUMINATION
DIAL POINTOR
PY01
DOLBY
AM
FM
PHONO
AUX
TAPE
STEREO
PZ01
DIAL ILLMINATION
P700 (L-CH)
P700 (R-CH)
P600
SEMICONDUCTOR CONNECTION
C B E
H706 H707
B C E
H714 H715
H708 H709 H801 H802
H001 ~ H008
H401 ~ H402 H001 ~ H004
H103 H152 ~ H154 H201 ~ H210 H302 ~ H311 H313 ~ H317 H701 ~ H705 H710 ~ H713 H803 ~ H807 HE03 ~ HE06 HH05 ~ HH08
H101, H102 H301, H312 H601, H602
HL01 ~ HL03 HL06, HL07
HE01, HE02
H151
H321
E : EMITTER
C : COLLECTOR
B : BASE
G : GATE
D : DRAIN
S : SOURCE

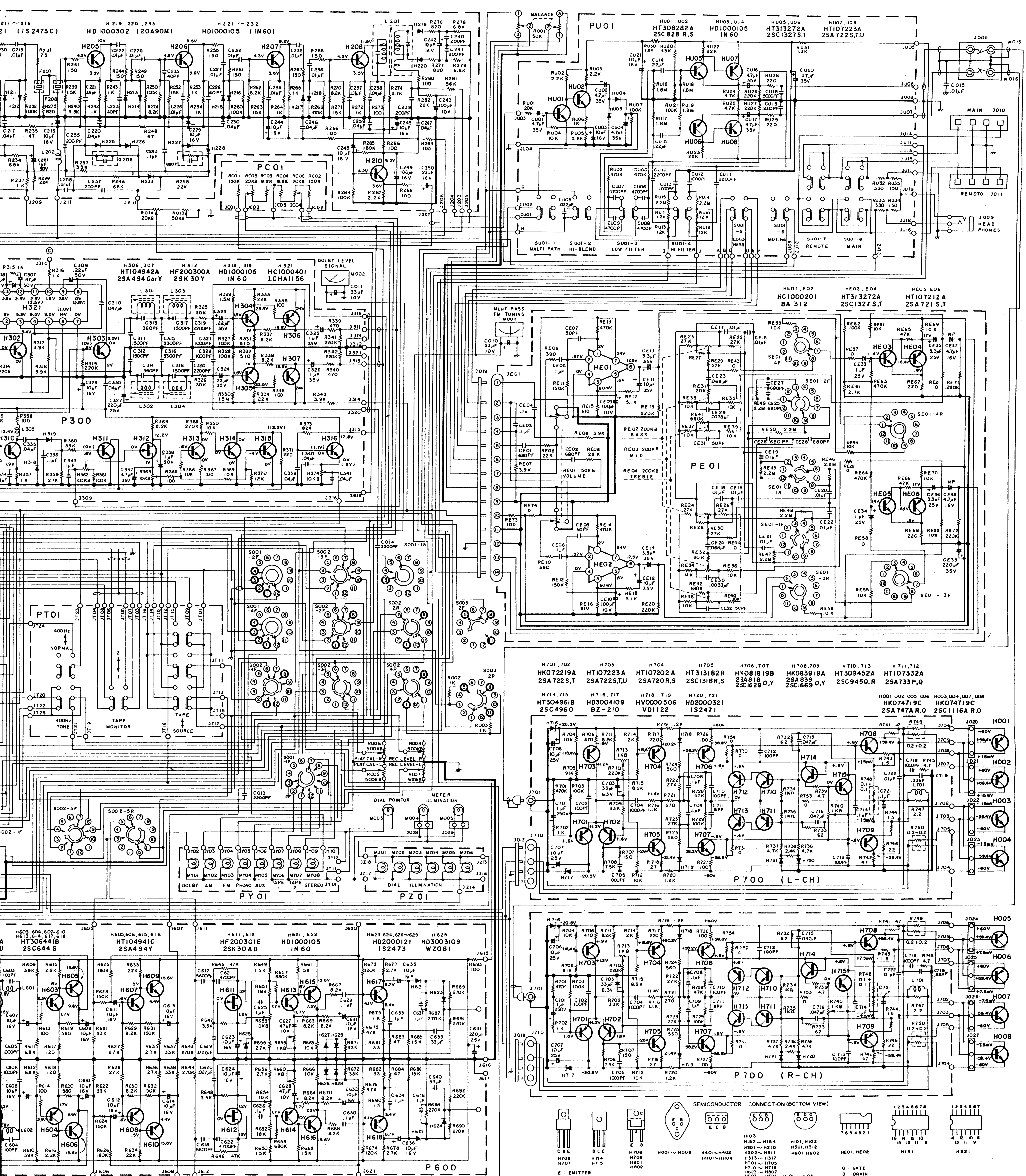
manufactured for the U.S.A. market.

Figure 29. Schematic Diagram


P100
P200
PC01
PV01
P150
P300
P400
PH01
PT01
P800
PL01
PY01
H101, 102 HF200191A 2SK19Y
H103 HT305351B 2SC535B
H201 ~ 209 HT308291C (2SC829C)
H210 HT306441B (2SC644S)
H211 ~ 218 HD2000121 (1S2473C)
H219, 220, 233 HD1000302 (20A90M)
H221 ~ 232 HD1000105 (IN60)
H151 HC1000506 μPC30C
H152 HT313272A 2SC1327S,T
H153, 154 HT104942A 2SA494Y,G
H155 HH0000212 31D27
H301 HF200301C 2SK30Y
H302, 303 H308~311, 313~317 HT308281D 2SC828S
H304, 305 HT307322A 2SC732 BorS
H306, 307 HT104942A 2SA494GorY
H312 HF200300A 2SK30Y
H318, 319 HD1000105 IN60
H321 HC1000401 I.CHA1156
DOLBY LEVEL SIGNAL
H401, 402 HT313441E 2SC1344E
H403, 404 HT313442A 2SC1344D,E
H405, 406 HT304580R 2SC458L,B
H407, 408 HD2000121 IS-2473CYe
H409 HV0000206 VD1212
H801, 802 HT403314A 2SD331C,D,E,F
H803 HT307343A 2SC734R,O,Y
HH01~HH04 HT313452A 2SC1345D,E
HH05~HH08 HT107202A 2SC720R,S
HH09, HH10 HT313182Q 2SC1318Q,R
HH11 HV0000606 VD1222
H804, 805 HT309452A 2SC945Q,R
H806, 807 HT313183A 2SC1318P,Q,R
H808, 809 HD2001103 DS-131B
H810 HD3002709 WZ-140
H811 HD3002309 WZ-071
H812 HD2000321 IS2471
H009 HD2001608 SG-5TS
H010 HD2001708 SG-5TR
TS6330208
HL01~HL03, HL06, HL07 HT307331C (2SC733 GR)
HL08~HL11 HD1000105 (IN60)
H601, 602 HK132719A 2SC1327T,U
H603, 604, 607~610 H613, 614, 617, 618 HT306441B 2SC644S
H605, 606, 615, 616 HT104941C 2SA494Y
H611, 612 HF200301E 2SK30AD
H621, 622 HD1000105 IN60
QUAD RADIAL OUT PUT
GROUND
PHONO
AUX
TAPE 1
TAPE 2
IN
OUT
DUBBING
AM ANT.
FM
AM
400Hz NORMAL
400Hz TONE
TAPE MONITOR
TAPE SOURCE
METER L/R
PLAY CAL-R
PLAY CAL-L
DOLBY
STEREO
PHONO AUX
TAPE 1
TAPE 2
S001 FUNCTION
PLAY OFF RECORD
DOLBY FM
S002 DOLBY
STEREO
REVERS
MONO
S003 MODE
250Hz 4KHz
S E01 TONE MODE
220V 50/60Hz
SWITCHS VIEWED FROM FRONT AND SHOW IN EXTREME COUNTER-CLOCKWISE POSITION.

MODEL 2325

NOTE: This schematic diagram applied to units manufactured for the European market.



PU01
BALANCE
PC01
P300
PT01
PE01
P700 (L-CH)
P700 (R-CH)
P600
PY01
PZ01
MAIN J010
REMOTO J011
J009 HEAD PHONES
DOLBY LEVEL SIGNAL
MLUTIPASS FM TUNING M001
SU01-1 MALTI PATH
SU01-2 HI-BLEND
SU01-3 LOW FILTER
SU01-4 HI FILTER
SU01-5 LOUDNESS
SU01-6 MUTING
SU01-7 REMOTE
SU01-8 MAIN
RE01 50KB VOLUME
RE02 200KB BASS
RE03 200KB MID
RE04 200KB TREBLE
400Hz TONE
NORMAL
TAPE MONITOR
TAPE SOURCE
PLAY CAL-R
PLAY CAL-L
REC LEVEL-R
REC LEVEL-L
DIAL POINTOR
METER ILLMINATION
DOLBY AM FM PHONO AUX TAPE 1 TAPE 2 STEREO
DIAL ILLMNATION
SEMICONDUCTOR CONNECTION (BOTTOM VIEW)
E : EMITTER
C : COLLECTOR
B : BASE
G : GATE
D : DRAIN
S : SOURCE

ured for the European market.

Figure 30. Schematic Diagram